VOLUME 12 • DECEMBER 1957 • NUMBER XII

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

ston University
Medicine
ord St.,
ass.
Bost

WP 1

Official Publication of

LIBRARY
JAN 29 1958
UNIVERSITY
SCHOOL OF MEDICINE

Nothing is
quicker...

Nothing is
more effective...

In Asthma

MEDIHALER-EPI®

Epinephrine bitartrate 7.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.15 mg. actual epinephrine.

For quick relief of bronchospasm of any origin. Acts more rapidly than subcutaneous epinephrine in acute allergic reactions.

MEDIHALER-ISO®

Isoproterenol sulfate 2.0 mg. per cc., suspended in inert, nontoxic aerosol vehicle. Contains no alcohol. Each measured dose 0.06 mg. actual isoproterenol.

Unsurpassed for rapid relief in asthma, bronchiectasis, emphysema.

THE MEDIHALER PRINCIPLE

Automatically measured-dose aerosol medications. In spillproof, leakproof, shatterproof, vest-pocket size dispensers. Also available in Medihaler-Phen™ (phenylephrine-phenylpropanolamine-hydrocortisone-neomycin) for prompt, lasting relief of nasal congestion.

Prescribe Medihaler medication with Oral Adapter on first prescription. Refills available without Oral Adapter.

Riker
LOS ANGELES

eliminate pain...while maintaining muscle relaxation and patient cooperation . . . **in obstetrical delivery**

Saddle block with Heavy Solution Nupercaine, testified safe by hundreds of thousands of successful deliveries, fulfills the criteria for ideal obstetrical anesthesia: "*1. An anesthetic that is safe for both mother and baby. 2. An anesthetic that is easy to administer, and one in which personnel can be quickly and easily trained. 3. An anesthetic which alleviates pain of delivery for the patient while still inducing complete relaxation for the benefit of the obstetrician.*"[1]

1. Seegar, J.K.B.E., and Devlin, A.J.: Maryland M.J. *5*:330 (June) 1956.

Supplied: 1:400 Nupercaine hydrochloride in 5% dextrose, 2-ml. ampuls, each ml. containing 2.5 mg. Nupercaine and 50 mg. dextrose; cartons of 10.

HEAVY SOLUTION **Nupercaine®**
hydrochloride
(dibucaine hydrochloride with dextrose 5% CIBA)

CIBA
SUMMIT, N. J.

2/2379HB

Joyfully anticipating

Natalins-PF®

prenatal phosphorus-free
vitamin-mineral capsules, Mead Johnson
generous calcium . . . no phosphorus

For the modern, pregnant woman, just 1 to 3 small, easy-to-swallow capsules daily—according to her individual need—provide generous amounts of iron, calcium and vitamins to help her meet the stress of pregnancy.

For some patients, you may prefer to prescribe Natalins,® which contain *both* calcium and phosphorus.

MEAD JOHNSON
SYMBOL OF SERVICE IN MEDICINE

NAP467

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

Volume 12 DECEMBER 1957 Number 12

SCIENTIFIC ARTICLES

Chemotherapy of Leukemia and Lymphoma, *Ralph O. Wallerstein, M.D., Paul M. Aggeler, M.D.,* and *Silvija Hoag, M.D.* 417
Some Aspects of Cholesterol Metabolism, *David Krit bevsky, Ph.D.* 423
Surgery and the Geriatric Patient, *Adele Gecht, M.D., F.A.C.S.* 430
Ataxic Form of Poliomyelitis, *Edward B. Shaw, M.D.* 434
An Unusual Cause of Intussusception: Report of a Case, *Christine E. Haycock, M.D.* 437

SPECIAL FEATURES

Portraits Honor Medical Women, *Bess Furman* 443
Medical Women of the Year 445
Scholastic Award Winners 450
International Tour 460
Index for 1956 465

REGULAR FEATURES

Medical Highlights 440
President's Message, *Elizabeth S. Kahler, M.D.* 442
These Were the First, ELIZABETH BASS COLLECTION 459
Opportunities for Women in Medicine 462
News of Women in Medicine 463
Book Notices 464

MISCELLANEOUS

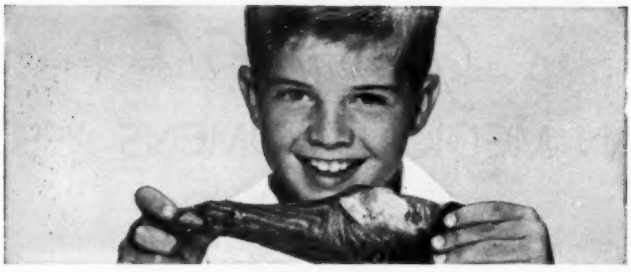
Editorial Board ..... Adv. p. 9
Board of Directors ..... Adv. p. 10
Branch Officers ..... Adv. p. 14
General Information for Contributors ..... Adv. p. 20
Junior Branch Officers ..... Adv. p. 24
Officers of the MWIA ..... Adv. p. 28
Editorial Forecast ..... Adv. p. 35
Library Fund Committee Chairmen ..... Adv. p. 36
Index to Advertisers and Products Advertised ..... Adv. p. 37

Neither the Editor nor the Publisher of the Journal of the American Medical Women's Association is responsible for any statements made or opinions expressed by any of its contributors.

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is published monthly by the American Medical Women's Association, Inc., at 136 4th Ave., North, Nashville 3, Tenn. Entered as second class matter at the Post Office at Nashville, Tennessee, under the Act of August 24, 1912. Acceptance for mailing at special rates of postage provided for in Section 1102, Act of October 3, 1917, and authorized July 15, 1918.

Copyright 1957 by the American Medical Women's Association, Inc.

Subscription, $5.00 per year; $1.00 single copy.
EDITORIAL AND ADVERTISING OFFICE, Journal of the American Medical Women's Association, 1790 Broadway, New York 19, N. Y. Telephone Judson 6-8683. Advertising Manager, Joseph Bourgholtzer, Box 281, Suffern, N.Y. Telephone Lafayette 9-3044 (Mahwah, New Jersey).



Gives little boys big appetites

REDISOL®

CYANOCOBALAMIN (CRYSTALLINE VITAMIN B_{12})

When appetites lag, REDISOL as a dietary supplement will often stimulate new interest in food. Weight gain follows increased food intake. Cherry-flavored REDISOL Elixir and soluble REDISOL Tablets readily mix with liquids.

MSD

MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.
1790 Broadway New York 19, N.Y.

APPLICATION FOR ASSOCIATE MEMBERSHIP

Name ..... Date .....

Address ..... Present

Address ..... Permanent

Please print or type name and address. Check address to which JOURNAL is to be mailed.

Medical School ..... Year of Graduation .....

Place of Internship .....

Date of Birth ..... Place of Birth .....

Associate members do not pay dues but have all the privileges of membership except voting, holding office, and membership in the Medical Women's International Association. Associate membership is open to: medical women in the first year of practice, women interns, residents in training, and fellows. Membership includes the JOURNAL each month without charge.

..... Signature

nearly all pruritus responds to topical "Meti"*steroid therapy...

no more

scratching

swelling

OOZING

Meti-Derm®

prednisolone, free alcohol

CREAM 0.5%

...in inflammatory and allergic dermatoses

about twice the potency of topical hydrocortisone

OINTMENT 0.5% WITH NEOMYCIN

...where secondary infection is a factor

effective prophylaxis and adjunctive therapy

Formula: Each gram of METI-DERM Cream contains 5 mg. (0.5%) of prednisolone, free alcohol, in a water-washable base. METI-DERM Ointment with Neomycin contains 5 mg. (0.5%) prednisolone, and 5 mg. (0.5%) neomycin sulfate in a white petrolatum base.

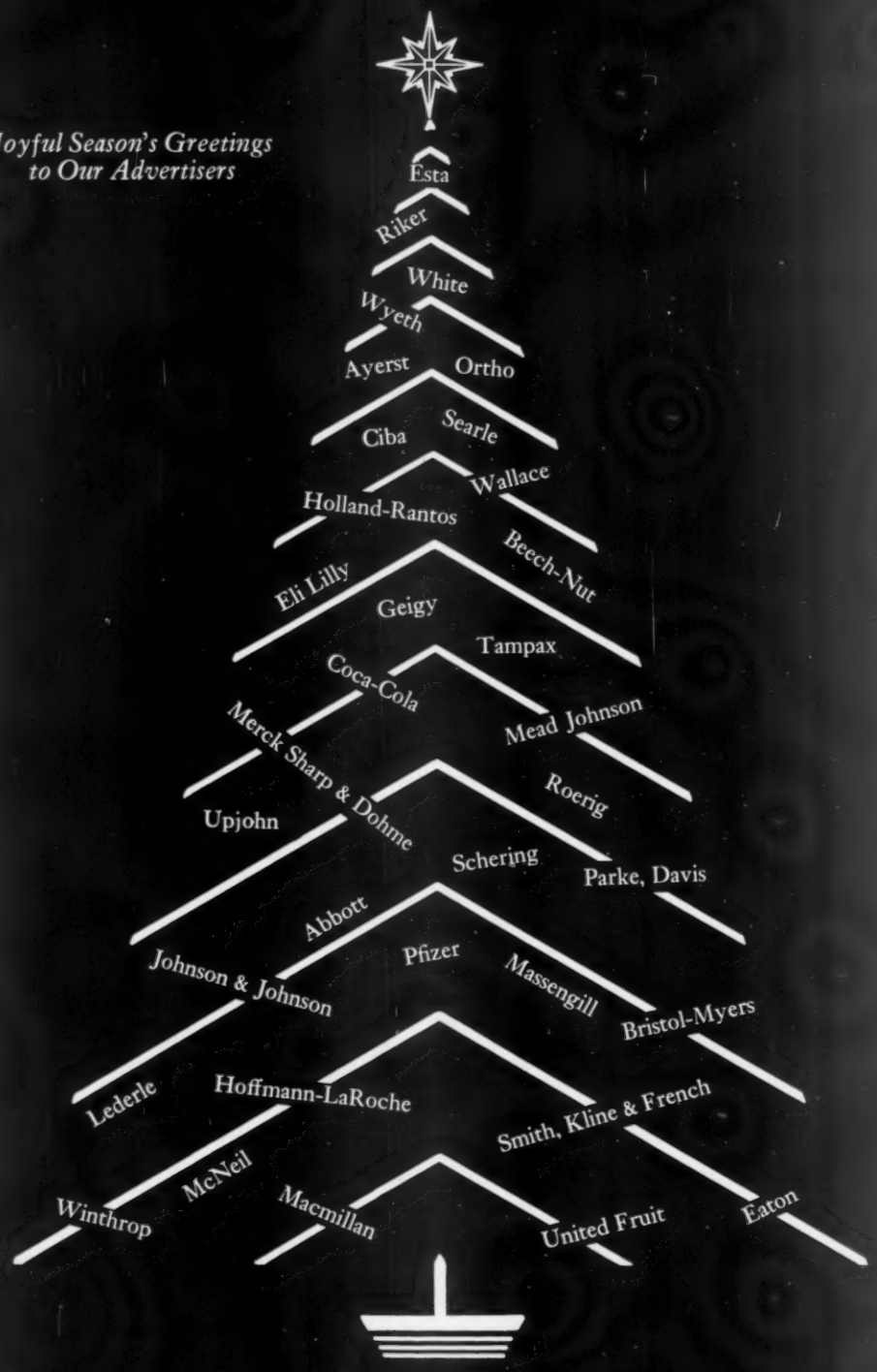
Packaging: METI-DERM Cream 0.5%, 10 Gm. tube; METI-DERM Ointment with Neomycin, 10 Gm. tube.

*T.M.

MD-J-397

SCHERING

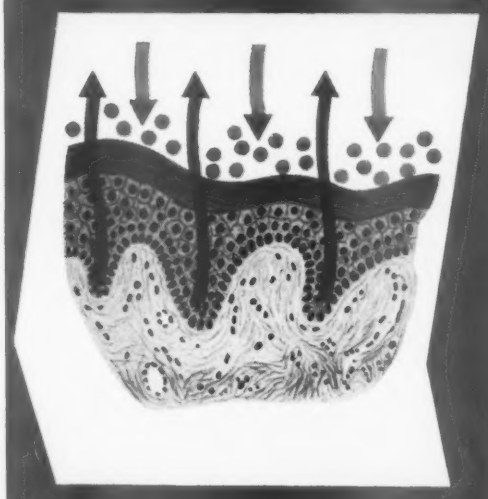
Joyful Season's Greetings
to Our Advertisers



The Journal of the
American Medical Women's Association

discontinuous film
protects without occlusion

PROOF



Discontinuous film formed by Johnson's Baby Lotion permits acceptance of water from underlying tissues and escape of water to the environment as well as normal respiratory function.

- helps combat miliaria, other irritations
- enhances antibacterial action

Contains hexachlorophene, 0.5 per cent.

bettering baby care through specialized research

BABY PRODUCTS DIVISION

Johnson & Johnson

for any child of any age in the vital first decade

The 'Deca-' Vitamin Family

three convenient dosage forms of 10 significant vitamins for comprehensive protection

is easy to specify because:

one basic name to remember—**'Deca-'**

one basic formulation

one standard of comprehensive protection

No refrigeration required • Special process assures stable B_{12} in solution with C • Hypoallergenic
Unbreakable plastic 'Safti-Dropper' supplied with Deca-Vi-Sol

Deca-Mulcin®
Teaspoon dosage with delicious orange flavor

Deca-Vi-Caps®
Capsule dosage—small, easy-to-swallow capsules

Deca-Vi-Sol®
Dropper dosage with new, improved taste: "Best taste yet"

MEAD JOHNSON
SYMBOL OF SERVICE IN MEDICINE

DF332

AN IMPORTANT ADVANCE IN MENOPAUSAL THERAPY

Because it replaces *half* control with *full* control.
Because it treats the *whole* menopausal syndrome.
Because *one* prescription manages *both* the psychic and somatic symptoms.

Two-dimensional treatment of the menopause

SUPPLIED: Bottles of 60 tablets.
Each tablet contains:

MILTOWN® (meprobamate, Wallace) ..... **400 mg.**
2-methyl-2-n-propyl-1,3-propanediol dicarbamate.
U. S. Patent No. 2,724,720.

Conjugated Estrogens (equine) ..... **0.4 mg.**
Licensed under U. S. Patent No. 2,429,398.

DOSAGE: One tablet t.i.d. in 21-day courses with one week rest periods. Should be adjusted to individual requirements.

Samples and literature on request.

"Milprem"

MILTOWN®
A Proven Tranquilizer + CONJUGATED ESTROGENS (EQUINE)
A Proven Estrogen

WALLACE LABORATORIES, *New Brunswick, N. J.*
who discovered and introduced Miltown, the original meprobamate.

Anxiety of pregnancy

'Miltown' therapy resulted in complete relief from symptoms in 88% of pregnant women complaining of nausea, vomiting, leg cramps refractory to calcium therapy, numbness and tingling of the extremities, headache, insomnia, anxiety, and emotional upsets.*

'Miltown' (usual dosage: 400 mg. q.i.d.) *relaxes both mind and muscle* and alleviates somatic symptoms of anxiety, tension, and fear.

'Miltown' therapy does not affect the autonomic nervous system and *can be used with safety throughout pregnancy.**

*Belafsky, H. A., Breslow, S. and Shangold, J. E.: Meprobamate in pregnancy. Obst. & Gynec. 9:703, June 1957.

Miltown®

THE ORIGINAL MEPROBAMATE
DISCOVERED & INTRODUCED BY
WALLACE LABORATORIES
NEW BRUNSWICK, NEW JERSEY

CM-5571

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION

1790 Broadway, New York 19, N.Y.

EDITORIAL BOARD

JANET K. AITKEN, C.B.E., M.D., F.R.C.P. .....*London, England*
INES L. C. DE ALLENDE, M.D.....*Cordoba, Argentina*
MARY M. CRAWFORD, M.D.....*New York, N.Y.*
BEULAH CUSHMAN, M.D.....*Chicago, Ill.*
MARIA PAUMGARTTEN DEANE, M.D.....*Belem, Para, Brazil*
EDNA M. GUEST, O.B.E., M.D.....*Toronto, Canada*
MARGARET H. JONES, M.D.....*Los Angeles, Calif.*
JOSEPHINE H. KENYON, M.D.....*Boulder, Colo.*
ELIZABETH KITTREDGE, M.D.....*Washington, D.C.*
IRENE A. KOENEKE, M.D.....*Halstead, Kan.*
ESTHER P. LOVEJOY, M.D.....*New York, N.Y.*
CATHARINE MACFARLANE, M.D.....*Philadelphia, Pa.*
MINNIE LEE MAFFETT, M.D.....*Dallas, Texas*
DAME A. LOUISE MCILROY, O.B.E., M.D.....*London, England*
LOUISE PEARCE, M.D.....*Belle Mead, N.J.*
GILDA PERAZA, M.D.....*Havana, Cuba*
ELLEN C. POTTER, M.D.....*Trenton, N.J.*
BARBARA B. STIMSON, M.D.....*Poughkeepsie, N.Y.*
EDNA H. TOMPKINS, M.D.....*Boston, Mass.*
RUTH WELLS, M.D.....*Pasadena, Calif.*
PRISCILLA WHITE, M.D.....*Boston, Mass.*

SPECIALISTS

Anesthesiology.....RITA JACOBS, M.D., *New York, N.Y.*
Cardiology.....TERESA MCGOVERN, M.D., *New York, N.Y.*
Endocrinology.....RITA FINKLER, M.D., *Newark, N.J.*
Gastroenterology.....MARIE ORTMAYER, M.D., *Littleton, Colo.*
Gynecology.....ELOISE PARSONS, M.D., *Chicago, Ill.*
Neurology.....KATE CONSTABLE, M.D., *New York, N.Y.*
Nutrition.....GRACE GOLDSMITH, M.D., *New Orleans, La.*
Obstetrics.....ANNE S. MASTER, M.D., *Cleveland, Ohio*
Orthopedic Surgery.....RUTH JACKSON, M.D., *Dallas, Texas*
Pediatrics.....MARY B. OLNEY, M.D., *San Francisco, Calif.*
Physical Medicine and Rehabilitation.....NILA K. COVALT, M.D., *Lake Park, Fla.*
Plastic Surgery.....ALMA DEA MORANI, M.D., *Philadelphia, Pa.*
Psychiatry.....ANNA COYNE TODD, M.D., *Washington, D.C.*
Public Health.....HELEN M. WALLACE, M.D., *Minneapolis, Minn.*
Radiology.....ELIZABETH SCHULZE HEALD, M.D., *Berkeley, Calif.*
Surgery.....ANNELLA BROWN, M.D., *Boston, Mass.*
Urology.....OCCO E. GOODWIN, M.D., *San Francisco, Calif.*

EDITOR
FRIEDA BAUMANN, M.D.

ASSOCIATE EDITOR
CAMILLE MERMOD, M.D.

MANAGING EDITOR
NORMA E. GOODMAN

BUSINESS MANAGER
GERTRUDE F. CONROY

DEPARTMENTAL EDITORS

Recent Advances in Medicine
FRANCES L. BOGATKO, M.D.
New York, N.Y.

Modern Concepts of Physiology
ESTHER M. GREISHEIMER, M.D.
Philadelphia, Pa.

Book Reviews
E. COOPER BELL, M.D.
Philadelphia, Pa.
HELEN STEVENS HASKELL, M.D.
New York, N.Y.

Reports of Proceedings
MARGARET S. TENBRINCK, M.D.
New York, N.Y.

Medical School Student News
EVA F. DODGE, M.D.
Little Rock, Ark.

Chairman of Publications Committee, ELIZABETH S. WAUGH, M.D., Philadelphia, Pa.

American Medical Women's Association, Inc.

BOARD OF DIRECTORS
1957-1958

OFFICERS

President: ELIZABETH S. KAHLER, M.D., 3828 Fulton St. N.W., Washington, D.C.
President-Elect: KATHARINE W. WRIGHT, M.D., 734 Noyes St., Evanston, Ill.
Retiring President: CAMILLE MERMOD, M.D., 294 S. Centre St., Orange, N.J.
First Vice-President: RUTH HARTGRAVES, M.D., 1208 The Medical Towers, Houston 25, Texas
Second Vice-President: JANE SCHAEFER, M.D., 490 Post St., San Francisco, Calif.
Recording Secretary: CLAIRE F. RYDER, M.D., 1632 30th St. N.W., Washington, D.C.
Corresponding Secretary: MARY MITCHELL HENRY, M.D., 601 Medical Arts Bldg., San Antonio 5, Texas
Treasurer: ELIZABETH R. FISCHER, M.D., 10401 S. Bell Ave., Chicago 43, Ill.
Assistant Treasurer and Finance Chairman: MARY MARGARET FRAZER, M.D., 76 W. Adams St., Detroit, Mich.

PAST PRESIDENTS

EVANGELINE STENHOUSE, M.D., 55 E. Washington St., Chicago 2, Ill.
JUDITH AHLEM, M.D., 954 South L. St., Livermore, Calif.
CAMILLE MERMOD, M.D., 294 S. Centre St., Orange, N.J.
ESTHER C. MARTING, M.D., 2314 Auburn Ave., Cincinnati, Ohio

REGIONAL DIRECTORS

New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
TO BE FILLED
North Atlantic (New York, Pennsylvania, New Jersey, Delaware)
ALMA DEA MORANI, M.D., 3665 Midvale Ave., Philadelphia, Pa. (1957-1960)
Middle Atlantic (Maryland, District of Columbia, Virginia, West Virginia, Foreign)
MARY K. L. SARTWELL, M.D., 6811 Riggs Rd., Hyattsville, Md. (1957-1960)
South Atlantic (North Carolina, South Carolina, Georgia, Florida, Puerto Rico)
MARY B. H. MICHAL, M.D., M.P.H. Box 528, Boone, N.C. (1957-1960)
Northeast Central (Ohio, Indiana, Illinois, Michigan, Wisconsin)
TO BE FILLED
Southeast Central (Kentucky, Tennessee, Alabama, Mississippi, Louisiana)
HELEN CANNON-BERNFIELD, M.D., Veterans Administration Hospital, Jackson, Miss. (1957-1960)
Northwest Central (Minnesota, Iowa, North Dakota, South Dakota, Nebraska)
GRACE M. SAWYER, M.D., Woodward, Iowa (1957-1960)
Southwest Central (Missouri, Arkansas, Kansas, Oklahoma, Texas)
ANITA JOHNSON MCNEELY, M.D., 910 N. Lake Shore Drive, Chicago 11, Ill. (1957-1960)
Northwest (Montana, Wyoming, Idaho, Washington, Oregon, Alaska)
IRENE GRIEVE, M.D., 525 Fernwell Bldg., Spokane, Wash. (1956-1959)
Southwest (Colorado, New Mexico, Utah, Arizona, California, Nevada, Hawaii)
PEARL KONTTAS, M.D., 114 Sotoyome Ave., Post Office Box 1374, Santa Rosa, Calif. (1956-1959)

* * * *

Director of Junior Membership
ESTHER C. MARTING, M.D., 2314 Auburn Ave., Cincinnati, Ohio

* * * *

Chairmen of Standing Committees (see page 12)

* * * *

Editor of the Journal of the American Medical Women's Association
FRIEDA BAUMANN, M.D., 1790 Broadway, New York 19, N.Y.

Executive Secretary: LILLIAN T. MAJALLY
EXECUTIVE OFFICE: 1790 Broadway, New York 19, N.Y., Circle 5-8000, ext. 8

NEW FILIBON*

PRENATAL CAPSULES **LEDERLE**

for an active pregnancy

Your prenatal and lactating patients get improved nutritional support, plus greater comfort and convenience—all at no extra cost—when you prescribe newly developed FILIBON Prenatal Capsules.

NEW better tolerated source of iron—ferrous fumarate—helps avoid gastric upset

NEW non-inhibitory intrinsic factor assures greater B_{12} absorption to meet increased requirements

NEW more comprehensive formulation . . . includes *phosphorus-free* calcium, Vitamins K and B_6, and important minerals and trace elements

NEW Reminder Jar . . . designed to be kept on the dining table where her vitamins won't be forgotten

Each capsule contains:

Vitamin A	4,000 U.S.P. Units
Vitamin D	400 U.S.P. Units
Thiamine Mononitrate (B_1)	3 mg.
Pyridoxine (B_6)	1 mg.
Niacinamide	10 mg.
Riboflavin (B_2)	2 mg.
Vitamin B_{12}	2 mcgm.
Ascorbic Acid (C)	50 mg.
Vitamin K (Menadione)	0.5 mg.
Folic Acid	1 mg.
Ferrous Fumarate	90 mg.
Iron (as Fumarate)	30 mg.
Intrinsic Factor	5 mg.
Fluorine (as CaF_2)	0.015 mg.
Copper (as CuO)	0.15 mg.
Iodine (as KI)	0.01 mg.
Potassium (as K_2SO_4)	0.835 mg.
Manganese (as MnO_2)	0.05 mg.
Magnesium (as MgO)	0.15 mg.
Molybdenum (as $Na_2MoO_4 \cdot 2H_2O$)	0.025 mg.
Zinc (as ZnO)	0.085 mg.
Calcium Carbonate	575 mg.

Dosage: one or more capsules daily.
Supplied: attractive, re-usable bottles of 100 capsules.

Lederle LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Trademark

BOARD OF DIRECTORS—(Continued)
CHAIRMEN OF STANDING COMMITTEES, 1957-1958

Auditing
ELIZABETH BRACKETT, M.D.
371 Franklin Ave., Nutley, N.J.

Credentials
MARY T. GLASSEN, M.D.
Phillipsburg, Kan.

Constitution and By-Laws
JOSEPHINE RENSHAW, M.D.
1150 Connecticut Ave., Washington, D.C.

Elections
ELIZABETH KITTREDGE, M.D.
3906 McKinley St. N.W., Washington 15, D.C.

Finance
MARY MARGARET FRAZER, M.D.
76 W. Adams St., Detroit 26, Mich.

History of Medicine
MARGARET NOYES KLEINERT, M.D.
23 Bay State Rd., Boston 15, Mass.

International
ADA CHREE REID, M.D.
118 Riverside Drive, New York 24, N.Y.

Legislative
ALMA JANE SPEER, M.D.
3232 Garfield St. N.W., Washington, D.C.

Library
ROSE V. MENENDIAN, M.D.
6900 N. Western Ave., Chicago, Ill.

Medical Education
MARY K. HELZ, M.D.
623 Walnut St., State College, Pa.

Medical Service—American Women's Hospitals
ESTHER P. LOVEJOY, M.D.
50 W. 50th St., New York 20, N.Y.

Nominating
ESTHER C. MARTING, M.D.
2314 Auburn Ave., Cincinnati, Ohio

Opportunities
MARY C. SHANNON, M.D.
28 Pleasant St., Worcester, Mass.
DOROTHY J. LYONS, M.D.
1233 N. Vermont Ave., Los Angeles 27, Calif.

Organization and Membership
JANE SCHAEFER, M.D.
490 Post St., San Francisco, Calif.

Publications
ELIZABETH S. WAUGH, M.D.
348 Green Lane, Philadelphia 28, Pa.

Public Health
JEANNE M. WARD, M.D.
1479 Centre St., Roslindale, Mass.

Public Relations and Publicity
ROSA LEE NEMIR, M.D.
303 E. 20th St., University Hospital, New York, N.Y.

Scholarships
ANTOINETTE LE MARQUIS, M.D.
704 Medical Dental Bldg., 233 "A" St., San Diego, Calif.

Woman's Medical College of Pennsylvania
CATHARINE MACFARLANE, M.D.
701 Medical Arts Bldg., Philadelphia, Pa.

Reference Committee A
JOSEPHINE RENSHAW, M.D.
1150 Connecticut Ave., Washington 6, D.C.

SPECIAL COMMITTEES

Midyear Meeting
ANITA JOHNSON MCNEELY, M.D.
910 N. Lake Shore Drive, Chicago 11, Ill.

Woolley Memorial Committee
THERESA SCANLAN, M.D.
133 E. 58th St., New York, N.Y.

STATE DIRECTORS

California: JANE SCHAEFER, M.D., 490 Post St., San Francisco.
Colorado: MILDRED DOSTER, M.D., 1015 Colorado Blvd., Denver 6.
Connecticut: SOPHIE C. TRENT, M.D., 236 W. Main St., Meriden.
District of Columbia: MARY K. SARTWELL, M.D., 6811 Riggs Rd., Hyattsville, Md.
Idaho: JANE DOERING GUMPRECHT, M.D., 302 N. Fifth St., Coeur d' Alene.
Illinois: ROSE V. MENENDIAN, M.D., 2400 W. Morse Ave., Chicago.
Indiana: CLEMENTINE FRANKOWSKI, M.D., 1907 New York Ave., Whiting.
Iowa: EVELYN M. ANDERSON, M.D., 816 Equitable Bldg., Des Moines.
Maryland: ELIZABETH ACTON, M.D., 700 Cathedral St., Baltimore 1.
Mississippi: AGNES BURT CARAWAY, M.D., Mississippi State Board of Health, Jackson.
New Hampshire and Vermont: AUGUSTA FOSTER LAW, M.D., 16 South St., Milford, New Hampshire.
New Mexico (Co-Directors): EVELYN F. FRISBIE, M.D., and LUCY MCMURRAY, M.D., 200 N. Walter St., Albuquerque.
Ohio (Co-Chairmen): MARJORIE GRAD, M.D., 1506 Chase Ave., Cincinnati.
JEANNE E. NITCHALS, M.D., 2205 Beechmont Ave., Cincinnati.
Oregon: MARTHA VAN DER VLUGT, M.D., John Day.
Pennsylvania: REBECCA M. RHOADS, M.D., 416 Chichester Lane, Wynnewood.
Utah: CAMILLA ANDERSON, M.D., 239 Virginia St., Salt Lake City.
Virginia: LILLIAN LINDEMANN, M.D., 4708 Carey St., Richmond.
Washington: BERNICE SACHS, M.D., 200 15th Ave., Seattle 2.
Western Massachusetts: MARY C. SHANNON, M.D., 28 Pleasant St., Worcester.
West Virginia: BEATRICE H. KUHN, M.D., 1109 Quarrier St., Charleston.
Wisconsin: ELSINE MOORE THOMAS, M.D., 200 E. Wells St., Milwaukee.

Beginner

It isn't right to be likened to a kite, but this boy is in the soft, white clouds. He likes today and doesn't fret about tomorrow. All he wants is to get somewhere now.

First things first for this tyro, he's training for the grand flight ahead. Yes, he's a master, faster beginner. He is an S-M-A baby.

PHYSICIANS' COUNCIL FOR INFORMATION ON CHILD HEALTH

This advertisement conforms to the Code for Advertising of the Physicians' Council for Information on Child Health.

Sound Infant Nutrition

Wyeth®
Philadelphia 1, Pa.

S-M-A®
Concentrated Liquid
Instant Powder

American Medical Women's Association, Inc.

BRANCH OFFICERS, 1956-1957

ONE, WASHINGTON, D.C.

President: Shirley Martin, M.D., 1746 K St. N.W., Washington, D.C.
Secretary: Vita R. Jaffee, M.D., 6301 W. Halbert Rd., Bethesda, Md.
Membership Chairman: Paula Kaiser, M.D., 4015 Bradley Lane, Chevy Chase, Md.
Meetings held first Tuesday, October to May.

TWO, CHICAGO, ILLINOIS

President: Rose V. Menendian, M.D., 2400 Morse Ave., Chicago 45.
Secretary: Julia Apter, M.D., 7135 S. Jeffery, Chicago 49.
Membership Chairman: Charlotte Kerr, M.D., 728 S. Ashland Ave., Chicago 7.
Meetings held monthly.

THREE, MARYLAND

President: Pearl Huffman Scholz, M.D., 11 Blythewood Rd., Baltimore 10.
Secretary: Frances H. Trimble, M.D., 6006 Chailesmead Rd., Baltimore 12.
Meetings held first Thursday of month.

FOUR, NEW JERSEY

President: Sylvia Becker, M.D., 299 Clinton Ave., Newark.
Secretary: Betty Sobel, M.D., 396 N. Arlington Ave., East Orange.
Membership Chairman: Ella Coughlan, M.D., 10 Oakwood, Orange.

FIVE, PORTLAND, OREGON

President: Miriam Luten, M.D., 308 Taylor St. Bldg., (919 Taylor St.), Portland 5.
Secretary: Dorothy Vinton, M.D., 2455 N.W. Marshall, Suite 5, Portland 10.
Dinner meetings held every two months, with a symposium on scientific topics of general interest.

SIX, OMAHA, NEBRASKA

President: Aileen Mathiasen-Sciortino, M.D., 6 Hall St., Council Bluffs, Iowa.
Secretary: Louise M. Camel Farrage, M.D., 478 Elmwood, Council Bluffs, Iowa.

EIGHT, NEW ORLEANS, LOUISIANA

President: Georgiana J. von Langermann, M.D., 1430 Tulane Ave., New Orleans.

TEN, WISCONSIN

President: Elaine Pedersen, M.D., 6040 W. Lisbon Ave., Milwaukee.
Secretary-Treasurer: Mary Hall, M.D., 4042 N. Wilson Drive, Milwaukee.

ELEVEN, SOUTHWESTERN OHIO

President: Rae Hartman, M.D., 2002 Madison Rd., Cincinnati 8.
Secretary: Emily E. Wright, M.D., 421 Burns Ave., Cincinnati 15.
Meetings held second Tuesday, September, November, January, March, May.

TWELVE, COLUMBUS, OHIO

President: Shirley Armstrong, M.D., 1776 King Ave., Columbus 12.
Secretary: Betsy Blackmore, M.D., 2625 Bethel Rd., Columbus 21.

THIRTEEN, SAN DIEGO, CALIFORNIA

President: Elizabeth Conforth, M.D., 7901 Frost St., San Diego.
Secretary: Virginia Caspe, M.D., 328 Maple St., San Diego.
Meetings held every other month on third Wednesday.

FOURTEEN, NEW YORK, NEW YORK

President: Adelaide Romaine, M.D., 35 W. 9th St., New York 11.
Secretary: Margaret S. Tenbrinck, M.D., 235 E. 22nd St., New York 10.
Membership Chairman: Estelle DeVito, M.D., 301 E. 21st St., New York 10.

FIFTEEN, CLEVELAND, OHIO

President: June Dvorak, M.D., 2235 Overlook Rd., Cleveland Heights 60.
Secretary: Jane McCollough, M.D., 2576 Traymore, University Heights 18.

SIXTEEN, PITTSBURGH, PENNSYLVANIA

President: Virginia E. Washburn, M.D., 4403 Center Ave., Pittsburgh 13.
Secretary: Pauline M. Holland, M.D., Woodville State Hospital, Woodville.

EIGHTEEN, NEW YORK STATE

President: Anna P. Walsh, M.D., 391 Jersey St., Buffalo 4.
Secretary: Harriet Hosmer, M.D., 333 Linwood Ave., Buffalo 9.
Membership Chairman: Marguerite P. McCarthy-Brough, M.D., 1811 W. Genesee St., Syracuse.

NINETEEN, IOWA

President: Ada Dunner, M.D., Bankers Trust Building, Des Moines.
Secretary: Mary Croker, M.D., Manchester.
Meetings held each April, in conjunction with state medical meeting.

(Continued on page 16)

SIGN OF GOOD TASTE

Coca-Cola
REG. U.S. PAT. OFF.

COPYRIGHT 1957 THE COCA-COLA COMPANY.

Season's Greetings

American Medical Women's Association, Inc.

BRANCH OFFICERS, 1956-1957—(Continued)

TWENTY (BLACKWELL), DETROIT, MICHIGAN

President: Katheryn L. O'Connor, M.D., 14301 Grand River Ave., Detroit 27.
Secretary: Dorothy D'Sena, M.D., 22470 Nona, West Dearborn.
Meetings held five times a year.

TWENTY-THREE, LOS ANGELES, CALIFORNIA

President: Juyne M. Tayson, M.D., 5414 N. Figueroa St., Los Angeles 12.
Secretary: Ethel M. Hamilton, M.D., 5740 York Blvd., Los Angeles 42.
Membership Chairman: Elizabeth Mason-Hohl, M.D., 1234 Vermont Ave., Hollywood.

TWENTY-FOUR, KANSAS

President: Mary T. Glassen, M.D., Phillipsburg.
Secretary: Ruth P. Spiegel, M.D., Formosa.
Next meeting will be held on call.

TWENTY-FIVE, PHILADELPHIA, PENNSYLVANIA

President: Helen E. di Silvestro, M.D., 6362 Drexel Rd., Philadelphia 31.
Secretary: Joan H. Buchanan, M.D., Watersmeet, Glen Mills.
Membership Chairman: Lucy A. La Salvia, M.D., 3001 W. Queen Lane, Philadelphia 29.
Meetings held three times a year.

TWENTY-SIX, MINNESOTA

President: Della G. Drips, M.D., Oronoco.
Secretary: Nellie N. Barsness, M.D., 540 Lowry Medical Arts Bldg., St. Paul.

TWENTY-NINE, ATLANTA, GEORGIA

President: Dorothy Jaeger-Lee, M.D., 3825 Wieuca Rd., N.E., Atlanta 5.
Secretary: Marguerite Louisa Candler, M.D., 3092 Argonne Drive, N.E., Atlanta 5.
Membership Chairman: Edna Porth, M.D., 3130 Maple Drive, N.E., Atlanta 5.
Meetings held third Saturday, alternate months.

THIRTY, UPPER CALIFORNIA

President: Mary C. Thompson, M.D., 450 Sutter St., San Francisco 8.
Secretary: Joan Davidson, M.D., 2107 Van Ness Ave., San Francisco.

THIRTY-ONE, MISSISSIPPI

President: Eva L. Meloan, M.D., 964 N. State St., Jackson.
Secretary: Ruth R. Burroughs, M.D., 2912 N. State St., Jackson.

THIRTY-TWO, WESTERN NORTH CAROLINA

President: Ethel Brownsberger, M.D., 75 Hendersonville Rd., Biltmore.
Secretary: Louise Galloway, M.D., 25 Arthur Rd., W. Asheville.

THIRTY-THREE, FLORIDA

President: Mary C. Patras, M.D., 8340 N.E. Second Ave., Miami 38.
Secretary: Minerva Gordon, M.D., 541 Lincoln Rd., Miami Beach.

THIRTY-FOUR, ARKANSAS

President: Elizabeth D. Fletcher, M.D., 705 Donoghey Bldg., Little Rock.
Secretary: Martha M. Brown, M.D., State Hospital, Little Rock.

THIRTY-FIVE, PUERTO RICO

President: Alice Reinhardt, M.D., Santorio Insula, Rio Piedros.
Secretary: Maria Amelia Pares, M.D., Professional Building, Santurce.

THIRTY-SIX, ALAMEDA COUNTY, CALIFORNIA

President: Miriam Rutherford, M.D., 2929 Summit St., Oakland.
Secretary: Dorothy McDonald, M.D., 2490 Channing Way, Berkeley.

THIRTY-SEVEN, SEATTLE, WASHINGTON

President: Phyllis Leibly, M.D., 4530 51st St., N.E., Seattle.
Secretary: Lily E. Schoffman, M.D., 828 Fourth and Pike Bldg., Seattle.

THIRTY-EIGHT, LONG BEACH, CALIFORNIA

President: Primitiva D. Demandante, M.D., 1322 Avalon Blvd., Wilmington.
Secretary: Margaret Wright, M.D., 4562 Linden Ave., Long Beach.

THIRTY-NINE, BOSTON, MASSACHUSETTS

President: Esther Silveus, M.D., 62 Bay State Rd., Boston.
Secretary: Mary-Phyllis Wentworth, M.D., 501 Beacon St., Boston.
Membership Chairman: Mary C. Shannon, M.D., 334 Highland St., Worcester.

FORTY, DALLAS, TEXAS

President: Harriet Nora Rogers, M.D., Courthouse, Dallas.
Secretary: Mary Agnes Hopkins, M.D., 1035 Medical Arts Bldg., Dallas.

(Continued on page 18)

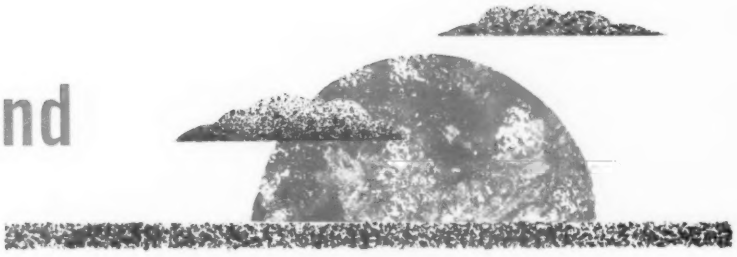
Please report all changes in Branch officers and chairmen as soon as possible to American Medical Women's Association, 1790 Broadway, New York 19, N.Y.

just

two doses

A. M.

and



P. M.

LIPO GANTRISIN

ROCHE

...and you can be sure that your patients will have prompt, lasting plasma and urine levels.

the regimen is simple when you prescribe

LIPO GANTRISIN

Lipo Gantrisin is an excellent pediatric form of Gantrisin, in which 2 doses a day are sufficient to combat most urinary and systemic infections of non-viral — non-rickettsial origin. Follow this regimen and note the quick response.

Dosage: Teaspoonfuls every 12 hours

Children 20 lbs — 1 60 lbs — 2
40 lbs — 1½ 80 lbs — 3

Adults . . . 4 or 5 (no alkalies or fluids need be given)

Lipo Gantrisin® Acetyl — brand of acetyl sulfisoxazole in a homogenized mixture

ROCHE LABORATORIES • DIVISION OF HOFFMANN-LA ROCHE INC • NUTLEY 10 • N.J.

ROCHE—REG. U. S. PAT. OFF.

DEAR DOCTOR:

Here's why no other kind of laxative is gentler, yet so fast acting

SAL HEPATICA® is gentle

It creates a gentle moist bulk, drawing water into the intestine by osmotic action, thus exerting a soft, gentle pressure initiating the proper intestinal response—the very mechanism which produces normal elimination.

It contains no harsh chemical irritants to stimulate intestinal overactivity—the condition that often causes griping and cramping.

SAL HEPATICA is fast acting

SAL HEPATICA gives prompt relief from constipation. When taken one-half hour before breakfast, your patients will get relief usually within the hour.

Or when taken one-half hour before supper, it will provide relief by bedtime. It will not interfere with work or sleep.

SAL HEPATICA, because it is antacid, helps relieve the hyperacidity which so frequently accompanies constipation—and its antacid action speeds it into the intestine.

APERIENT
LAXATIVE
CATHARTIC

SAL HEPATICA has a sound pharmacologic basis.

It is both effervescent and antacid.

"The emptying time of the stomach is actually shortened by reducing the gastric acidity."[1]

"Effervescent mixtures decrease the emptying time of the stomach."[2]

1. The Physiological Basis of Medical Practice. 1945, p. 486.
2. New England J. Med. 235:80 (July 18) 1946.

Bristol-Myers Co. • 19 West 50 Street • New York 20, N. Y.

to prevent and/or control

POSTOPERATIVE NAUSEA AND VOMITING

Dramamine®
Brand of Dimenhydrinate

"This study, which covers 1,500 cases, agrees with the findings of Moore and his associates that Dramamine, when administered parenterally, reduces by at least 50 per cent the incidence of vomiting in postoperative patients."

Harms, B. H.: The Use of Parenteral Dramamine to Control Postoperative Vomiting in the Office Practice of Oral Surgery: A Report of Cases, Oral Surg. 7:294 (March) 1954.

Dramamine Ampuls, serum type, 250 mg. in each 5 cc.

SEARLE

Research in the Service of Medicine

American Medical Women's Association, Inc.

BRANCH OFFICERS, 1956-1957

(Continued)

FORTY-ONE, SOUTHEAST VIRGINIA

President: Hertha Riese, M.D., Route 2, Box 397, Glen Allen.

Secretary: Maysville Owens Page, M.D., 2904 Rugby Rd., Richmond.

FORTY-TWO, HOUSTON, TEXAS

President: Ethel E. Erickson, M.D., 2044 Dryden Rd., Houston.

Secretary: Marga H. Sinclair, M.D., 3707 Ingold, Houston.

FORTY-THREE, THE ALAMO, SAN ANTONIO, TEXAS

President: Mary Mitchell Henry, M.D., 601 Medical Arts Bldg., San Antonio.

Secretary: Ione Huntington, M.D., 647 New Moore Bldg., San Antonio.

Membership Chairman: Pearl Zink,, M.D., 615 Medical Arts Bldg., San Antonio.

FORTY-FOUR, MARICOPA, PHOENIX, ARIZONA

President: Zdenka Hurianek, M.D., 4115 N. 10th, Phoenix.

Secretary: Helen Davis, M.D., 3337 E. Mitchell Drive, San Antonio.

FORTY-FIVE, TUCSON, ARIZONA

President: Virginia C. Van Meter, M.D., Old Pueblo Club, Tucson.

FORTY-SIX, UTAH

President: Camilla Anderson, M.D., 239 Virginia St., Salt Lake City.

FORTY-SEVEN, COLORADO

President: Edna Stuver, M.D., 2501 Grape St., Denver.

Secretary: Leda Janke, M.D., 1001 S. Broadway, Denver.

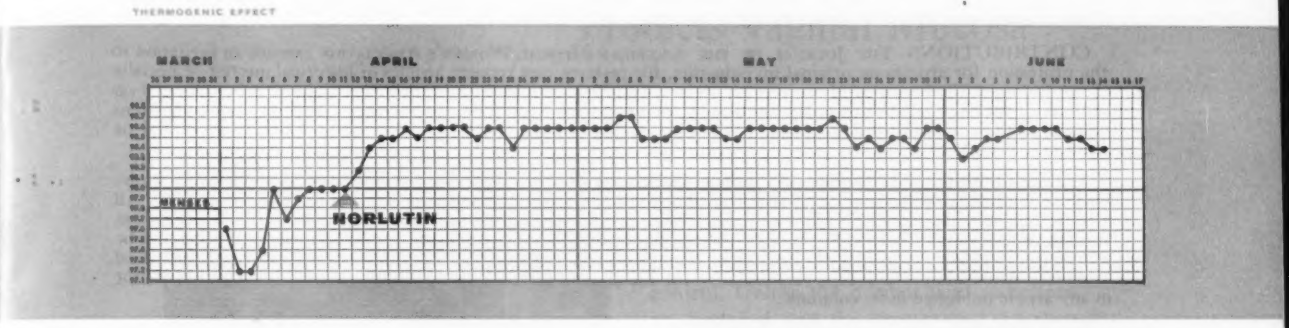
FORTY-EIGHT, NORTHWEST INDIANA

President: Eleanore A. Walters, M.D., 602 Broadway, Gary.

Secretary: Ellen K. Cohen, M.D., Hebron.

***oral* progestational agent**
with
unexcelled potency
and
unsurpassed efficacy

With NORLUTIN you can now prescribe truly effective *oral* progestational therapy. Small oral doses of this new and distinctive progestogen produce the biologic effects of injected progesterone.



▲When NORLUTIN was administered to patients with uniphasic temperature curves and menstrual irregularities a rise in basal temperature occurred.*

NORLUTIN T.M.

(norethindrone, Parke-Davis)

major advance in female hormone therapy for certain disorders of menstruation and pregnancy

INDICATIONS FOR NORLUTIN: conditions involving deficiency of progestogen, such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

PACKAGING: 5-mg. scored tablets (C. T. No. 882), bottles of 30.

*Greenblatt, R. B.: *J. Clin. Endocrinol.* 16:869, 1956.

PARKE, DAVIS & COMPANY • DETROIT 32, MICHIGAN

50192

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

GENERAL INFORMATION

THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is the official organ of the American Medical Women's Association and is issued monthly the fifteenth of each month.

CONTRIBUTIONS—THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION extends an invitation to the profession for articles on original investigation, for reviews, case reports, articles of historical interest—especially those dealing with the status of women physicians, biographies of women in medicine, and any other material on subjects of special concern to women physicians. All manuscripts for publication, letters, and all communications relating to the editorial management of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION should be sent to the Editor at the address below.

Articles are accepted for publication with the understanding that they are original contributions never previously published and are contributed solely to the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. All manuscripts are subject to editorial modification and upon acceptance become the property of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Material published in the JOURNAL is copyrighted and may not be reproduced without permission of the Editor. Neither the editors nor the publisher nor the American Medical Women's Association will accept responsibility for the statements made or opinions expressed by any contributor in any article published in its columns.

MANUSCRIPTS—Manuscripts must be typewritten on one side of the paper only with double spacing and wide margins. The original and one carbon copy should be submitted; a second carbon copy should be retained by the author. The author's full name, academic or professional titles, and complete address must accompany manuscript.

ABSTRACTS—Authors are requested to submit concise abstracts of their papers to the Editor.

ILLUSTRATIONS—Illustrations must be in the form of glossy prints or drawings in black ink. On the back of each illustration the figure number, author's name, and indication of the top of the picture must be given. Legends for illustrations must be typewritten in a single list, with numbers corresponding to those on photographs and drawings. THE JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION encourages the use of illustrations and will supply a reasonable number free of cost; special arrangements must be made with the Editor for excess illustrations or elaborate tables. The Editor is not responsible for the safe return of manuscripts and illustrations. All material supplied for illustrations, if not original, should be accompanied by reference to the source and permission for reproduction from the owner of copyright. Recognizable photographs of patients should carry with them written permission for publication.

REFERENCES—Bibliographic references should appear at the end of the manuscript and not in footnotes. They should conform to style of the Quarterly Cumulative Index Medicus. This requires, in the order given, name of author, title of article, name of periodical, with volume, inclusive pages, month (and day of month if the journal appears weekly), and year. References should be numbered consecutively throughout the paper and listed in order by number from the text.

Galley proofs of scientific articles will be furnished JOURNAL authors for correction. Proofs of other articles will be supplied upon request.

REPRINTS—Reprints of all articles must be ordered at time proof is returned. Prices will be available for quotation from the Business Manager when articles are in page form. Individual reprints of articles must be obtained from the author.

REVIEWS OF BOOKS—Because of limitations of space, only books of scientific interest or reference value which can be recommended to its readers will be noted. All books for review should be sent to the Editor at address below.

SUBSCRIPTIONS—The subscription price of the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is $5.00 per year, $9.00 for two years; single copies are $1.00.

ADVERTISING—Rates will be furnished by the Business Manager of the JOURNAL, 1790 Broadway, New York 19, N. Y. The publishers reserve the right to decline any advertising submitted and to censor all copy. Acceptance of an advertisement does not imply official endorsement of the product advertised.

CHANGE OF ADDRESS—Notification of change of address should be sent to the JOURNAL office, 1790 Broadway, New York 19, N. Y. Please give both old and new addresses.

Address all correspondence to the

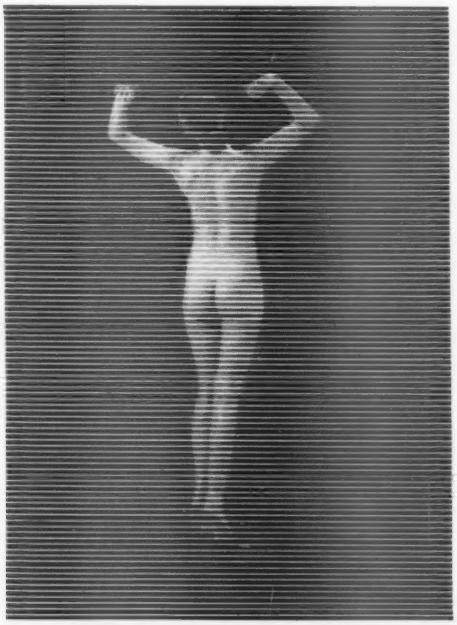
JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION

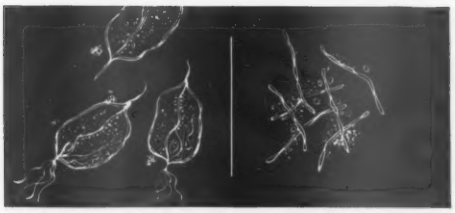
1790 Broadway, New York 19, N. Y.

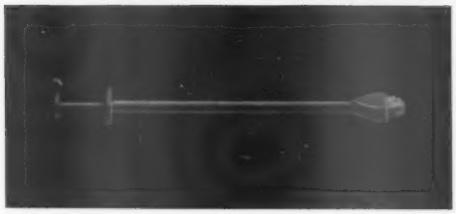
CHEMOTHERAPY PLUS FLORA CONTROL

Floraquin®

Destroys Vaginal Parasites
Protects Vaginal Mucosa







Vaginal discharge is one of the most common and most troublesome complaints met in practice. Trichomoniasis and monilial vaginitis, by far the most common causes of leukorrhea, are often the most difficult to control. Unless the normal acid secretions are restored and the protective Döderlein bacilli return, the infection usually persists.

Through the direct chemotherapeutic action of its Diodoquin® (diiodohydroxyquin, U.S.P.) content, Floraquin effectively eliminates both trichomonal and monilial infections. Floraquin also contains boric acid and dextrose to restore the physiologic acid pH and provide nutriment which favors regrowth of the normal flora.

Method of Use

The following therapeutic procedure is suggested: One or two tablets are inserted by the patient each night and each morning; treatment is continued for four to eight weeks.

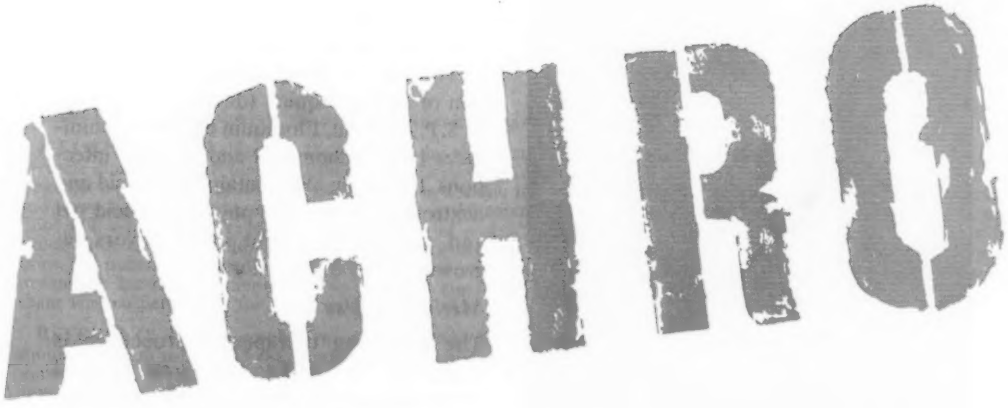
Intravaginal Applicator for Improved Treatment of Vaginitis

This smooth, unbreakable, plastic device is designed for simplified vaginal insertion of Floraquin tablets by the patient. It places tablets in the fornices and thus assures coating of the entire vaginal mucosa as the tablets disintegrate.

A Floraquin applicator is supplied with each box of 50 tablets. G. D. Searle & Co.. Chicago 80, Illinois. Research in the Service of Medicine.

SEARLE

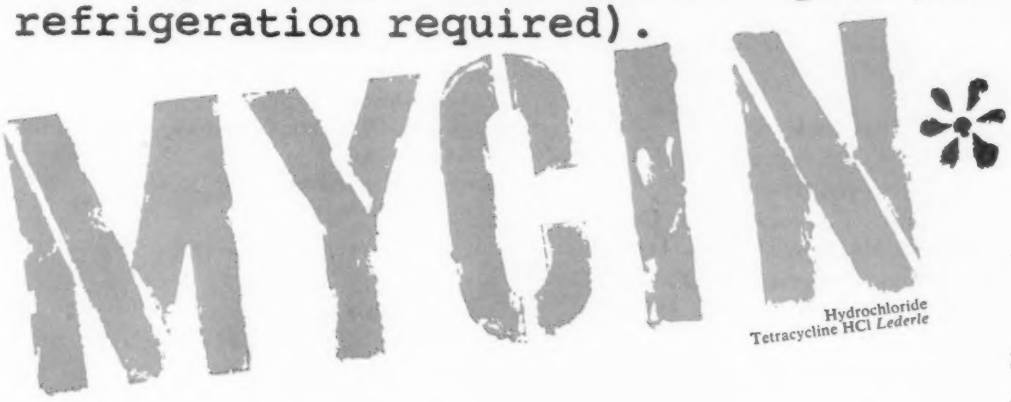
INTRAVENOUS Compatible with common IV fluids. Stable for 24 hours in solution at room temperature. Average IV dose is 500 mg. given at 12 hour intervals. Vials of 100 mg., 250 mg., 500 mg.



THERAPEUTIC BLOOD LEVELS ACHIEVED

Many physicians advantageously use the parenteral forms of ACHROMYCIN in establishing immediate, effective antibiotic concentrations. With ACHROMYCIN you can expect prompt

INTRAMUSCULAR Used to start a patient on his regimen immediately, or for patients unable to take oral medication. Convenient, easy-to-use, ideally suited for administration in office or patient's home. Supplied in single dose vials of 100 mg., (no refrigeration required).



IN MINUTES -- SUSTAINED FOR HOURS

control, with minimal side effects, over a wide variety of infections - reasons why ACHROMYCIN is one of today's foremost antibiotics.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK Lederle

*REG. U. S. PAT. OFF.

JUNIOR BRANCH OFFICERS, 1956-1957

University of Alabama

President: Maude Dieseker, 800 S. 20th St., Birmingham.

Secretary: Betty Jean McBride, 800 S. 20th St., Birmingham.

Sponsor: Evelyn L. Stansell, M.D., 314 N. 15th St., Bessemer.

University of Arkansas

President: Ellidee Dotson, 125 Johnson St., Little Rock.

Secretary: Daisilee H. Berry, 5506½ W. Markham, Little Rock.

Sponsor: Eva Dodge, M.D., University of Arkansas Medical Center, Little Rock.

Baylor University

President: Elizabeth Muchmore, 1903 Portsmouth, Houston, Texas.

Secretary: Betsy Comstock, Baylor University College of Medicine, Houston, Texas.

Sponsor: Ruth Hartgraves, M.D., 1208 The Medical Towers, Houston 25, Texas.

Esther C. Marting Junior Branch, Cincinnati, Ohio

President: Cornelia Dettmer, 2291 Werk Rd.

Secretary: Virginia Beamer, 351 Erkendrecher Ave.

Sponsor: Esther C. Marting, M.D., 2314 Auburn Ave.

Medical College of Georgia

President: Nelle Strozier, Medical College of Georgia, University Place, Augusta.

Secretary: Sara L. Goolsby, Medical College of Georgia, University Place, Augusta.

Sponsor: B. Shannon Gallaher, M.D., Medical College of Georgia, University Place, Augusta.

Hahnemann Medical College

President: Audrey Krauss, 300 S. Camas St., Philadelphia.

Secretary: Mary Rorro, Hahnemann Medical College, Philadelphia.

Sponsor: Elizabeth B. Brown, M.D., 1930 Chestnut St., Philadelphia.

Howard University

President: Sara Ewell, Wheatley Hall, Howard University, Washington, D.C.

Secretary: Z. Ozella Thompson, 5345 Bell Place, Washington 1, D.C.

Northwestern University

President: Marianne Whowell, 2118 N. Sedgwick, Chicago.

Secretary: Frances Taylor, 1160 N. State St., Chicago.

Sponsor: Beulah Cushman, M.D., 25 E. Washington, Chicago.

Florence Sabin Junior Branch, University of Colorado

President: Marcia Frances Currey, 4200 Ninth Ave., Denver.

Secretary: Olga Letitia Miskowiec, 4200 Ninth Ave., Denver.

Sponsor: Gertrud Weiss, M.D., 4200 E. Ninth Ave., Denver 20.

University of Utah

President: Frances R. Beier, 3396 East 3900 South, Salt Lake City.

Secretary: Mary Gehres, 233 Douglas St., Salt Lake City.

Sponsor: Camilla Anderson, M.D., 239 Virginia St., Salt Lake City.

George Washington University

President: Roberte Raymond, 2010 Kalorama Rd. N.W., Washington, D.C.

Secretary: Diane Perrine, 2010 Kalorama Rd. N.W., Washington, D.C.

Sponsor: Elizabeth S. Kahler, M.D., 3828 Fulton St. N.W., Washington, D.C.

University of Nebraska

President: Gretchen Glode, Immanuel Hospital, 34th and Forbes, Omaha.

Secretary: Marilyn Myers, 3220 Lafayette, Omaha.

Sponsor: Mary Jo Henn, M.D., University of Nebraska, College of Medicine, 42nd and Dewey Ave., Omaha.

Nebraska–Creighton

President: Corinne Farrell, 4016 Izard St., Omaha.

Secretary: Barbara Kenyon, 4016 Izard St., Omaha.

ABBOTT LABORATORIES

the most effective treatment known for dandruff **SELSUN®**
(Selenium Sulfide, Abbott)

711009

2 IBEROL Filmtabs a day supply:

THE RIGHT AMOUNT OF IRON	
Ferrous Sulfate, U.S.P.	1.05 Gm. (Elemental Iron—210 mg.)
PLUS THE COMPLETE B COMPLEX	
BEVIDORAL® (Vitamin B_{12} with Intrinsic Factor Concentrate, Abbott)	1 U.S.P. Unit (Oral)
Folic Acid	2 mg.
Liver Fraction 2, N.F.	200 mg.
Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	3 mg.
Calcium Pantothenate	6 mg.
PLUS VITAMIN C	
Ascorbic Acid	150 mg.

anemia of pregnancy

another indication for

filmtab® **Iberol®**

potent antianemia therapy
plus the complete B-complex

Abbott

AN EXPERIMENT IN MEDICAL NOMENCLATURE INTRODUCING THE TERM:

"cell examination for uterine cancer"

The exfoliative cytological examination is called by some doctors the *cytologic cervical test*—by others the *"Pap" smear test.* In urging all women to have this test annually, we are calling it the *cell examination for uterine cancer.*

Here are our reasons:

Cytologic cervical test is a term which seems complicated to many women.

"Pap" smear test is simple, but women we have talked to find the word "smear" unpleasant and disturbing, and it may add to their anxieties about pelvic examinations.

Public relations advisors say that broadcasters and editors will dislike "smear"—and TV, radio and the press will be essential to the success of this educational project.

We have considered other terms but have at last agreed on *cell examination for uterine cancer* as the term which simply and accurately describes the keystone of this vitally important program.

This test can help save thousands of women each year. In many parts of the country it is becoming widely accepted as a part of a routine checkup. As fast as county medical societies approve, our local Units will urge women to go to their physicians annually for a *cell examination for uterine cancer.*

AMERICAN CANCER SOCIETY

News of Our Advertisers

POTENT, NONADDICTING ANALGESICS

Real success in the search for safer and better drugs for relieving pain may not be far off, recent research results on a drug called normorphine indicate.

Potent analgesic, or pain-relieving, compounds are among the most useful drugs in medical practice. However, doctors must use them with care because they can cause addiction to the drugs and can also have specific toxic effects.

Recent research results with normorphine proved active in relieving pain and caused relatively mild side reactions in animals. In drug addiction studies in human beings, normorphine, while not free of addiction liability, showed distinct advantages over widely used analgesics now available. A close chemical relative of morphine, normorphine has been known to science for many years. Until now, however, it has not been known to possess useful analgesic properties.

In tests with dogs, Merck Institute scientists found that, while normorphine was somewhat less potent in relieving pain than morphine, the dosage could be increased to give it equal potency without increasing ill effects. It was also shown that normorphine could be given in place of morphine to morphine addicts. When the normorphine treatment was stopped, only relatively mild signs of abstinence appeared instead of the severe physical distress often caused by withdrawal of morphine from an addict. Thus, normorphine might prove to be a very effective aid in treating and rehabilitating morphine addicts.

In both animals and human beings, unfavorable side reactions from normorphine have been considerably milder than those from morphine, according to research results to date. A very significant finding has been that normorphine causes less respiratory depression than morphine in doses of equal potency.

Normorphine is not ready for general use. It may take at least another year to establish definitely whether the drug can be recommended to the medical profession for use in human beings.

SAFFLOWER FOR ATHEROSCLEROSIS

A thistlelike herb provides the essential ingredient for a unique new compound made available by Abbott Laboratories, North Chicago, Ill., to help manage the maior killer among all types of heart disease—atherosclerosis. The new compound, called Saff, contains oil pressed from the seeds of the safflower, long used as a food in India and various parts of Europe. Safflower seeds were found in the graves of the Pharaohs, indicating the plant was grown in Egypt as much as 3,500 years ago.

The safflower, whose heads and seeds resemble those of a small sunflower, has been grown on a large scale in the United States for only a few years, primarily as the source of a valuable oil for the paint industry. Recently, nutritional scientists discovered that essential unsaturated fatty acids appear to play a beneficial part in treating atherosclerosis. Because safflower oil contains a higher percentage of essential unsaturated fatty acid and a lower percentage of saturated fatty acids than ony other edible vegetable oil, scientists began studying its possibilities as a therapeutic tool in heart disease.

Saff contains 46 per cent linoleic acid, an essential unsaturated fatty acid. It has less than 5 per cent saturated fatty acid and less than 13 per cent oleic acid, a nonessential unsaturated fatty acid. Because it is compatible with most liquids, Saff can be mixed with all common beverages as well as a number of foods. It is lightly flavored, making it palatable right from the spoon.

SAFETY BOTTLE

A nonspill safety bottle, which promises to be a major contribution in the reduction of accidental poisoning in children, has been developed by Johnson & Johnson for its newest pediatric product, Liquiprin.

Liquiprin, a new analgesic-antipyretic for children, is safer than aspirin and made safer still by the exclusive nonspill safety bottle. Medicine cannot pour or spill from the bottle, even when turned upside down.

A mushroom shaped polyethylene check valve attached to a fine stainless steel wire spring lodges under the neck of the bottle. When the bottle is tilted, the check valve is forced against the neck of the bottle, preventing access to the medication. Liquiprin is removed from the bottle by a polyethylene dropper calibrated to measure exact dosage. The valve is pushed aside when the dropper is inserted into the bottle. When the dropper is withdrawn, the valve springs back into place.

Noludar

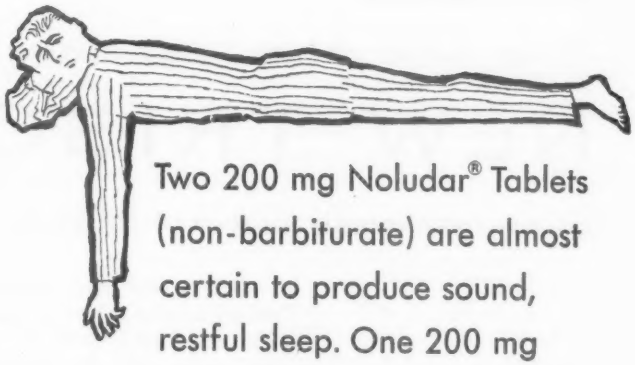
will put your patient

to sleep

and he will not awaken

with that knocked out

feeling



Two 200 mg Noludar® Tablets (non-barbiturate) are almost certain to produce sound, restful sleep. One 200 mg tablet is frequently adequate.

ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc
Nutley 10, New Jersey

Noludar®—brand of methyprylon—non-barbiturate sedative-hypnotic

Ever hear of a "delicious" antacid?

NEW TRISOGEL

(Magnesium Trisilicate and Colloidal Aluminum Hydroxide, Lilly)

. . . overwhelmingly preferred by adult taste-test panel

An entirely new manufacturing process has made 'Trisogel' a really palatable antacid. Its creamy, smooth texture and mild mint flavor assure you wholehearted patient acceptance. An adult taste panel enthusiastically selected 'Trisogel' for texture, flavor, and color over all other formulas and formula variations tested.

'Trisogel' combines the prompt antacid action of aluminum hydroxide with the more sustained effect of magnesium trisilicate.

Each 5 cc. (approx. 1 teaspoonful) of 'Trisogel' will neutralize 100 cc. of *N*/10 HCl.

***Dosage:** In the treatment of peptic ulcer, the usual adult dose is 1 or 2 tablespoonfuls every one to three hours.*

'Trisogel' is available in 12-oz. bottles at pharmacies everywhere.

ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U. S. A.

Journal of the
AMERICAN MEDICAL WOMEN'S ASSOCIATION

Volume 12 DECEMBER 1957 Number 12

Chemotherapy of Leukemia and Lymphoma

Ralph O. Wallerstein, M.D., Paul M. Aggeler, M.D., and M. Silvija Hoag, M.D.

A FEW RELATIVELY SAFE AND EFFECTIVE chemotherapeutic agents for use in leukemia and allied disorders have now become commercially available to all physicians. Careful testing in several research centers has shown that most of these materials interfere with cellular metabolism, primarily with that of malignant cells, but in overdosage with that of normal cells as well. Handling of these drugs requires thorough knowledge of their relative margins of safety and of the natural history of the disease under treatment.

The following notes, which are based largely on our personal experience, may serve as a guide to the nonhematologist who is required to handle similar problems. Resourceful clinical management with these agents presents a considerable advance in the palliative treatment of malignant disorders of the hematopoietic system.

Both purine and folic acid antagonists are used in the treatment of all forms of acute leukemia. In the majority of clinics, treatment in children is started with an antifolic compound. 4-Amino-pteroylglutamic acid (Aminopterin), dispensed as 0.5 mg. tablets, is given three to seven times weekly for three or more weeks, with the dose 0.5 mg. in children and 0.5 to 2 mg. in adults. This drug may cause alopecia, skin eruptions, and severe ulcerations

This study was assisted by a grant from the Girls' Recreation Club of San Francisco.

Dr. Wallerstein is Associate Clinical Professor of Medicine, University of California School of Medicine, and Chief, Hematology Research Laboratory, Children's Hospital, San Francisco.

Dr. Aggeler is Associate Professor of Medicine, University of California School of Medicine, and Chief, Department of Medicine, Children's Hospital, San Francisco.

Dr. Hoag is a Postdoctoral Research Fellow, National Heart Institute, National Institutes of Health, U.S. Public Health Service.

of the oral, gastrointestinal, or vaginal mucous membrances and should be discontinued temporarily with the development of ulceration, nausea, vomiting, or diarrhea. Toxic manifestations of the drug can be controlled by the administration of 3 mg. (1 cc.) of folinic acid (Leucovorin), once or twice daily. 4-Amino-N^{10}-methylpteroylglutamic acid (Methotrexate), dispensed as 5 mg. scored tablets, is given orally in the usual dose of 2.5 to 5 mg. daily for children and 5 to 10 mg. daily for adults. Its action and uses are similar to those of 4-aminopteroylglutamic acid, and its toxic manifestations are somewhat less.

These drugs are administered for periods of two to four weeks, or until hematological remission or toxic symptoms occur. Remissions for as long as six months have been reported. Maintenance dosage while the disease is in remission is not recommended. When the inevitable relapse occurs, retreatment with the same drug may be instituted, but the chances of a second remission are poor. It is preferable to change to 6-mercaptopurine (Purinethol), a purine metabolism antagonist, dispensed as 50 mg. scored tablets. The usual initial dose is 2.5 mg. per Kg. of body weight per day, although doses of 5 mg. or more per day have been used. There are no immediate side reactions, but with prolonged use patients may develop anorexia, nausea, vomiting, diarrhea, stomatitis, proctitis, rhinitis, and severe hematopoietic depression. Since the drug may have a delayed action, it should be withdrawn temporarily at the first indication of any toxic manifestations. Treatment with this drug should be continued for from three to eight weeks, or until hematological remission or toxic symptoms intervene. There is a difference of opinion as to the proper use of this drug. Most authorities recommend continuing its administration until the peripheral blood leukocyte count has reached normal or only slightly less than normal. Others recommend continuing its administration, despite marked pancytopenia, until the bone marrow is virtually wiped out, and then supporting the patient with transfusions in the hope that when regrowth of the marrow occurs it will be of the normal and not of the leukemic elements. This is heroic treatment and should only be attempted by those having considerable experience with the drug.

Some authorities prefer to reverse the above order of treatment, starting with 6-mercaptopurine and retreating with 4-amino-pteroylglutamic acid. All acute leukemias are much more resistant to treatment in adults than in children. The few favorable results in acute leukemia reported in adults have been with 6-mercaptopurine. It is the practice of the authors to begin treatment of all acute leukemias with this drug.

In the acute terminal exacerbation of chronic granulocytic leukemia, 4-amino-pteroylglutamic acid is virtually useless while 6-mercaptopurine may produce a remission for several months in some cases.

All patients should be supported with transfusions and antibiotics as required. There is no unanimity of opinion regarding the use of the adrenocortical steroid hormones. While in some clinics use of the hormone is started and continued for a week or so, in others it is used as a last resort, and antileukemic drugs are used first. Some authorities recommend withholding the hormones in all cases of acute granulocytic and monocytic leukemia. It is our practice to use hormones as the initial treatment in acute lymphocytic leukemia and to give them in other types only if anemia, hemorrhagic phenomena, or marked debility dominate the picture.

CHRONIC LEUKEMIA

The choice of treatment rests between ionizing radiation (total body, splenic, or internal) and drugs. Before embarking on any form of treatment one should formulate a definite plan of treatment. This can and often must be revised, depending upon the reaction of the patient and on new circumstances that arise during the course of the disease. If roentgen-ray therapy is used, it should always be done in close co-operation with the patient's personal physician and the radiologist.

A patient with chronic leukemia should be informed from the outset that he has a chronic disease that will require periodic medical observation and treatment for the remainder of his life. He should be repeatedly assured, however, that the disease can be kept under good control and that he will remain virtually symptom-free until he dies. Treatment seldom should be instituted without fully informing the patient of the diagnosis. Particular emphasis must be placed on allaying anxiety due to newspaper publicity and general misinformation. It must be made clear to the patient that he has chronic leukemia and that most of what he reads and hears relates to acute leukemia, which is an entirely different disease. Most patients

can be advised that they have a benign form of the disease and that some patients have been known to live for as long as 20 years with it.

Once treatment is instituted, it should be pursued until the leukocyte count is reduced to normal, unless this proves impossible because the treatment itself produces anemia or thrombocytopenia. Once a satisfactory remission has been achieved, the patient should be followed at not longer than three month intervals (often much shorter) for the remainder of his life. Each exacerbation should be treated as soon as its presence is definitely established. A pattern of treatment at fairly regular intervals can be established in many cases. The principal aim of treatment is to abolish symptoms and physical findings and to correct anemia and thrombocytopenia—not simply to "treat the leukocyte count." However, it will be found that the majority of patients feel better and maintain more normal erythrocyte and platelet levels when their leukocyte counts are kept at, or near, the normal range. The steroid hormones usually are not required in the uncomplicated case of chronic leukemia, but they may be of great value in controlling purpura or associated hemolytic anemia.

CHRONIC GRANULOCYTIC LEUKEMIA

The drug of choice in the treatment of chronic granulocytic leukemia is busulfan (Myleran), dispensed as 2 mg. tablets. It is administered orally in doses of 2 to 10 mg. daily and usually causes no immediate side reactions. In therapeutic doses this drug usually has a selective effect on the granulocyte. With overdosage the drug may cause severe irreversible bone marrow damage, particularly to the megakaryocytes.

Busulfan has been proved equal if not superior to ionizing radiation in the treatment of this disease. The recommended initial daily dose is 4 to 6 mg. daily, continued until the leukocyte count approaches normal. Some investigators have used a dose of 10 mg. daily for the first week or 10 days. There is usually a lag period of a week or 10 days before the effects of this drug are fully apparent. In most cases we administer a dose of 80 to 100 mg. during the first 10 to 14 days. Then, depending on the response of the patient, therapy with the drug is continued at a lower dosage schedule until a complete remission is obtained. In the past we sometimes have administered a dose of 1 to 2 mg. daily to maintain the patient in remission; however, we have discontinued this practice because our impression has been that irreversible thrombocytopenia is encountered more often when continuous rather than intermittent treatment is used. Unless a maintenance dose is given, retreatment at one to two month intervals is usually necessary, although prolonged remissions for many months after the initial course of treatment have been observed. Exacerbations can usually be treated with smaller daily doses and for a shorter period of time than in the initial course. Overtreatment results in general depression of myelopoiesis and also in reduction of the platelet count, which may be irreversible. Definite thrombocytopenia may occur with leukocyte counts in the region of 4,000 to 5,000 per cubic millimeter, and before any significant drop in the hemoglobin level has occurred. For these reasons, platelet counts should always be done as part of the routine count when using busulfan and the drug should be withheld if a reduction in the count below normal range has occurred.

Other drugs such as triethylene melamine (TEM), mechlorethamine, or nitrogen mustard (Mustargen), ethyl carbamate (Urethane), 6-mercaptopurine, and potassium arsenite solution (Fowler's solution) are effective in the treatment of chronic granulocytic leukemia; however, they are either inferior in action, more toxic, or more difficult to administer than busulfan and their use is no longer recommended.

The terminal acute exacerbation of chronic granulocytic leukemia does not respond to roentgen-ray therapy or busulfan. A small proportion of cases may be brought under partial control with 6-mercaptopurine.

CHRONIC LYMPHOCYTIC LEUKEMIA

While this disease is encountered at all ages, the median incidence is at 65 years. It is the most common type of leukemia encountered in the aged. Many with this disease are completely asymptomatic and tend to be relatively asymptomatic for many years despite persisting very high leukocyte levels. Therefore, in any individual case it is necessary to consider whether to treat at all before deciding on what form of treatment to employ. The following guide is used by the authors.

1. With leukocyte counts up to 50,000 per cubic millimeter, with few symptoms or physi-

cal findings of leukemia, and without anemia or thrombocytopenia, no treatment is given.

2. With leukocyte counts above 50,000 per cubic millimeter in patients with few symptoms or physical findings and without anemia or thrombocytopenia, treatment is optional.

3. All patients with definite symptoms or physical findings are treated regardless of the level of the leukocyte count.

4. All patients with anemia or thrombocytopenia are treated regardless of symptoms or physical findings.

The drugs of choice in the treatment of chronic lymphocytic leukemia are TEM and chlorambucil (Leukeran). TEM, dispensed as 1 mg. and 5 mg. scored tablets for oral use, also may be given intravenously, intrapleurally, or intraperitoneally. It is best absorbed when given orally with 2 Gm. sodium bicarbonate a half hour to two hours before breakfast. Most patients tolerate an individual total dose of 5 mg. without reaction. If this dose causes anorexia, nausea, and vomiting, it should be reduced to 2.5 mg. TEM may cause marked suppression of hematopoiesis and in overdosage may cause hypoplasia or aplasia of the bone marrow.

In the initial treatment of a patient with TEM, 5 mg. doses should be given daily at twice-weekly intervals with the total dose not over 15 mg. in most cases. An interval of at least one week, and preferably two weeks, should be allowed to elapse before giving any more of the drug. It may require as long as three weeks for the TEM's full effect on the bone marrow to become apparent. Depending upon the response in the blood count, treatment may be continued in doses of 5 to 10 mg. at intervals of not less than one week, but preferably longer, until a satisfactory remission has been obtained. Use of the drug should never be resumed until anemia or thrombocytopenia induced by previous administration has completely disappeared. Anemia or thrombocytopenia induced by overtreatment may persist for months, even when due to a very small dose. If repeated large doses are required to affect the leukocyte count, it will usually be found that anemia and thrombocytopenia are also produced and that lymph node regression is unsatisfactory. Under such circumstances it would be better to use roentgen-ray therapy or chlorambucil than to continue with TEM.

Chlorambucil appears superior to TEM in the treatment of many patients with chronic lymphocytic leukemia. Dispensed as 2 mg. tablets, it is administered orally in doses of from 0.1 to 0.2 mg. per Kg. of body weight per day until maximal therapeutic effect has occurred. In contrast to the rapidly acting TEM, signs of objective improvement with chlorambucil may not begin for three or four weeks and maximal improvement may not be achieved for two to four months of continuous daily administration of the drug. Symptoms of gastrointestinal irritation are minimal or absent. Leukopenia, anemia, and thrombocytopenia may develop on the higher dosage schedules after four to six weeks of continuous administration, but recovery is prompt when the dose is reduced or the drug is discontinued.

HODGKIN'S DISEASE

In the first stage of Hodgkin's disease a tumor arises in a single focus involving one lymph node or a group of nodes. This stage may go unrecognized until regional lymph nodes become enlarged. Symptoms are characteristically absent at this time, and the physical finding of lymphadenopathy by palpation or roentgen-ray examination offers the only means of detection. As the tumor becomes more widespread, symptoms arise from enlarged lymph nodes or infiltrated viscera, and fever, malaise, pruritis, anorexia, weight loss, pancytopenia, and abnormal protein synthesis occur. When Hodgkin's disease is localized, aggressive treatment with surgery and radiation is indicated. It is not within the scope of this discussion to describe the details of radiotherapy. However, it is important for the internist to know that aggressive radiotherapy implies a tumor dose of 3,000 r to 5,000 r, which far exceeds the amount required to cause disappearance of the palpable tumor. Unfortunately, in the majority of patients with apparently localized Hodgkin's disease, dissemination has already occurred, but maximal therapeutic efforts must be made anyway.

A difficult problem in diagnosis may arise at this stage of the disease.

When the primary manifestation of a malignant lymphoma is a hilar mass in the absence of peripheral lymphadenopathy, biopsy should be seriously considered, since the alternative course, a therapeutic trial of roentgen-ray therapy, does not solve the problem of precise diagnosis.

When Hodgkin's disease is no longer localized to a single group of lymph nodes but still

only involves the glands in one region, vigorous radiotherapy is still indicated.

When the disease has become generalized and symptomatic, the aim of treatment is palliation. This implies an active program that, if administered wisely, can provide a significant prolongation of an asymptomatic and a useful life. At this stage, treatment with mechlorethamine, TEM, or chlorambucil replaces radiation therapy. Mechlorethamine is dispensed in 20 cc. vials, each containing 10 Gm. of the drug triturated with 90 mg. of anhydrous sodium chloride. The usual dose is 0.3 mg. per Kg. of body weight given intravenously. This drug was first given in doses of 0.1 mg. per Kg. on successive days until a dose of 0.3 to 0.6 mg. per Kg. had been administered. It is unnecessary to divide the dosage in this way. Individual doses as high as 0.6 mg. per Kg. may be given under certain circumstances. This drug almost invariably causes nausea and vomiting, which begin several hours after administration and which may persist for as long as three or four days. The patient should be heavily sedated during this time. Chlorpromazine (Thorazine) is helpful in controlling gastrointestinal symptoms. The method of administration of the drug is of the utmost importance. The patient should be in a hospital. Therapy with an intravenous infusion of isotonic sodium chloride solution is started. The physician should be certain that the needle is well placed and that there is no infiltration of the tissues before proceeding further. He should wear rubber gloves while handling the mechlorethamine since it can cause severe burns on contact with the skin. The contents of each vial are mixed with 10 cc. of distilled water and are immediately injected into the tubing that contains the running intravenous infusion. The rate of administration should be regulated so that there is a continuous flushing of isotonic sodium chloride solution through the tubing during the injection. The injection should be temporarily discontinued if the patient develops pain along the course of the vein. Unless these precautions are observed, a painful thrombophlebitis may develop. Improvement of symptoms can be anticipated within three to five days after treatment. Repeated courses should be spaced at intervals of at least one month and longer if possible. Mechlorethamine produces profound depression of bone marrow function. For this reason, it is usually contraindicated in the presence of leukopenia or thrombocytopenia unless the pancytopenia is due to hypersplenism (enlarged spleen, markedly active bone marrow, and evidence of hemolysis). The use of steroid hormones, roentgen-ray treatment to the spleen, and even splenectomy may be required in this situation.

TEM or chlorambucil can be used to replace mechlorethamine when the need for immediate relief of symptoms is not compelling. In many patients their use is preferable to mechlorethamine because they produce a less violent immediate reaction, less hematopoietic depression, and a more gradual and sustained effect on the disease.

There is no contraindication to the simultaneous use of drugs and radiation. Radiation may be used in addition to mechlorethamine in the acutely ill patient with far-advanced disease, to reduce the size of troublesome localized masses that do not respond sufficiently well to drugs. When there is paraplegia and disturbance of intestinal and bladder function due to extra dural tumor masses, mechlorethamine, followed by local radiotherapy, is recommended. Such a combined regimen has the advantage over radiotherapy alone, not only in decreasing spinal cord pressure rapidly but also in avoiding the hazards of an initial increase in pressure secondary to the radiation reaction in the tumor. In the superior mediastinal compression syndrome, the use of mechlorethamine, followed by radiation therapy, is recommended for the same reason.

There is one special situation in which the local use of mechlorethamine or TEM may be indicated. When there is intractable effusion due to involvement of the pleura, the injection of mechlorethamine into the pleural cavity at the completion of thoracentesis may achieve effective control of the fluid accumulation.

Pregnancy does not appear to modify the natural history of Hodgkin's disease. However, since the life span of the patient is likely to be relatively short, the child born of such a patient has a very high likelihood of losing his mother at an early date, and interruption of pregnancy should be seriously considered. If treatment with mechlorethamine or abdominal irradiation is indicated in the first few months of pregnancy because of constitutional symptoms, there is a clear medical indication for therapeutic abortion. In the latter half of pregnancy, the use of mechlorethamine probably does not lead to fetal death or developmental abnormalities.

The evidence for significant antitumor effect of adrenocortical hormone therapy is uncon-

vincing. The steroid hormones are useful, however, in the control of fever, malaise, anorexia, pruritis, and hemolytic anemia in the far-advanced case.

Another recent addition to the therapeutic armamentarium is colchicine for intravenous use. While this drug does not appear to have a significant antitumor effect, it is very useful in some patients in controlling pruritis and fever. Dispensed in vials containing 1 mg. in 2 cc. of diluent, the contents of three vials should be diluted up to 10 to 20 cc. with isotonic sodium chloride solution prior to use. The material should be given very slowly by intravenous injection in order to avoid thrombosis of the vein. Injections are given at two to three day intervals. The patient should not receive barbiturates while undergoing treatment with this product. No toxic side reactions have been reported following the use of this dosage of colchicine given intravenously despite the fact that an equivalent dose given orally may cause severe nausea, vomiting, and diarrhea. Intravenous use of colchicine apparently does not cause depression of the bone marrow. It may be used in patients having pancytopenia and can also be used in conjunction with mechlorethamine or roentgen-ray therapy. The number of injections to be given in any course of treatment must be decided for the individual case, but administration at three day intervals has been carried out in some patients for several months without deleterious effects. Colchicine must not be confused with a second alkaloid of *Colchicum* (desacetylmethylcolchicine [Demecolcin]), which does cause bone marrow depression and which has been used experimentally in the treatment of chronic granulocytic leukemia.

LYMPHOSARCOMA

The treatment of lymphosarcoma is very similar to that of Hodgkin's disease. Intensive radiation therapy is recommended when the tumor is localized. Palliative radiation therapy or treatment with mechlorethamine, TEM, or chlorambucil should be used when the disease has become generalized. Constitutional symptoms of fever, malaise, and anorexia are not so common as in Hodgkin's disease, but hypersplenism is not unusual. The steroid hormones are quite effective in the control of the hemolytic anemia of chronic lymphatic leukemia and lymphosarcoma. In general, there appears to be more opportunity for the use of radiotherapy and less need for mechlorethamine in lymphosarcoma than in Hodgkin's disease.

MULTIPLE MYELOMA

The treatment of multiple myeloma is very unsatisfactory. Localized radiation therapy may help in the control of pain but seldom improves bone lesions. Occasional patients have shown substantial improvement with radioactive phosphorus given intravenously, but in the majority of patients this has proved unsatisfactory. Recent work suggests that radioactive iodinated albumin may be more effective. Stilbamidine has caused improvement in some cases. However, since it must be given intravenously daily for periods of several weeks and has a strong tendency to cause obliteration of veins at the site of injection, trigeminal neuralgia, and kidney damage, its use is no longer recommended. A favorable influence of the steroid hormones in multiple myeloma has been reported by some authors and not by others. Ethyl carbamate, dispensed as 0.3 Gm. enteric-coated tablets, has been disappointing, although it is the treatment of choice by most authors. In the great majority of cases the recommended dose of 3 Gm. daily causes nausea and vomiting. Use of this drug may result in severe leukopenia, thrombocytopenia, and damage to the liver. A recent report suggests that a daily dose of 1 Gm. of ethyl carbamate in combination with 50 mg. of R-151 [B-naphthyl-di (2-chloropropyl) amine] may be a more effective remedy than ethyl carbamate alone and that results can be achieved without gastrointestinal irritation or hematopoietic depression. This preparation from England is in the form of gelatin capsules containing 25 mg. R-151 and 0.5 Gm. ethyl carbamate.

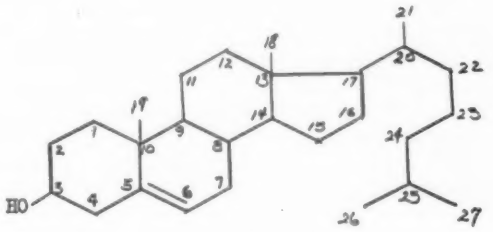
Some Aspects of Cholesterol Metabolism*

David Kritchevsky, Ph.D.

CHOLESTEROL IS ONE OF THE MOST WIDELY disseminated compounds in the animal kingdom. Although it is one of the oldest, from the standpoint of isolation and recognition, and one of the most widely studied, its functions still are not nearly understood. The many disciplines that have been directed toward the study of this compound make any attempt at collation of data enormous. Most of the work on cholesterol has concerned itself with some phase of its utilization, and I hope to discuss a small portion of this work.

First, it might be well to spend a few minutes reviewing historical background and commenting on some of the significant biological work in this area. Although this material was recognized by its chemical and physical properties more than 200 years ago, it was Chevreul [1] who first showed that this compound could be differentiated from other waxes by virtue of its being nonsaponifiable and who gave it the name cholesterine, meaning bile *(cholē)* solid *(stereos)*. Cholesterol was shortly identified as a constituent of blood,[2] brain,[3] and egg yolk [4] among other biological materials, and, finally, Gobley [5] showed that cholesterol derived from all these sources was identical.

Studies on the chemistry and structure of this complex substance were begun 100 years ago, and the brilliant researches of Windaus and Wieland in the early part of this century culminated in elucidation of the structure of this sterol.



Cholesterol

Biological work with cholesterol has a somewhat more recent history. Early experiments on the biosynthesis of cholesterol were necessarily limited to balance experiments. Among the earliest of these was the work of Dezani and Cattoretti [6,7] who found that the cholesterol content of albino rats increased by one-third over a period during which they were maintained on a cholesterol-free diet. These findings plus the fact that a small, but constant, amount of cholesterol was recovered from the feces of these animals led Dezani to conclude that the animal body could synthesize cholesterol. Similar balance studies involving human beings,[8] dogs,[9] rats,[10] and other species continued to yield additional evidence that biogenesis of cholesterol did indeed take place in the animal body.

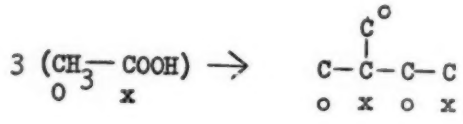
With the availability of isotopes, more de-

* Presented on "Lederle Day" of the AMWA Annual Meeting, May 31, Pearl River, N.Y.

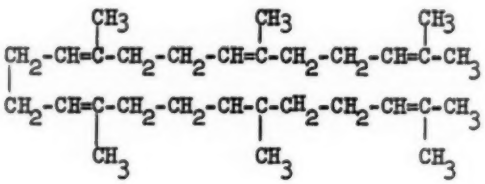
At the time this paper was presented, Dr. Kritchevsky was a member of the Biochemical Research Section, Research Division, American Cyanamid Company, Pearl River, N.Y. At present, Dr. Kritchevsky is Associate Member, The Wistar Institute of Anatomy and Biology, Philadelphia, and Assistant Professor of Biochemistry, Department of Medicine, University of Pennsylvania.

tailed studies of cholesterol biogenesis were possible. Rittenberg and Schoenheimer [11] found that the cholesterol obtained from mice maintained on deuterium-rich water contained an inordinately high concentration of heavy hydrogen. Using deuterium-labeled sodium acetate, Bloch and Rittenberg [12] showed that this compound could be incorporated into cholesterol with the isotopic content of the nucleus being roughly equal to that of the side chain.[13] Bloch has pursued these studies vigorously, and the current knowledge concerning the intricate mechanisms of cholesterol biogenesis is due in large part to his elegant work.

To summarize the current status of cholesterol biosynthesis, it is recognized that the acetate molecule may be the sole source of all 27 carbons in the cholesterol molecule. Of these, 15 are derived from the acetate methyl group and 12 from the carboxyl. The contributions to the nucleus and side chain from these sources are 10 and 5 for the nucleus and 9 and 3 for the side chain. Acetate in some activated form condenses with itself to give a isoprene-like, five carbon atom intermediate.

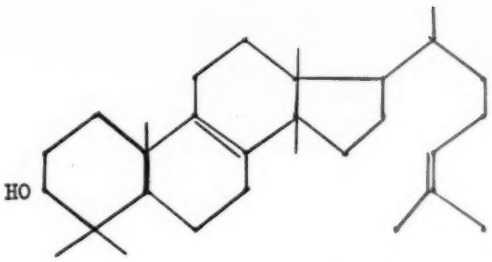


The exact structure of this intermediate is still under active investigation, but it behaves as if it were that pictured in the second structural formula. The next fairly well documented intermediate is squalene.



Squalene
$C_{30}H_{50}$

Squalene is formed by condensation of six isoprene units of the type shown in the formula and cyclizes to a compound called lanosterol, a constituent of wool fat.



Lanosterol

Lanosterol contains three more carbon atoms and one more double bond than cholesterol, but it has been shown to be precursor of this sterol. The exact steps between lanosterol and cholesterol have not been elucidated, but there are indications that the order in which the extra methyl groups are lost and the order of double bond shifts and hydrogenations will soon be clear. The work that is being described so briefly has been carried out with isotopic tracers, mainly carbon, the radioactive form of natural carbon. The brilliant studies of Cornforth and co-workers on the stepwise degradation of cholesterol [14-16] and of squalene [17] have given proof that the distribution of carbon atoms in these two compounds is that which would be predicted if acetate were the sole precursor.

The major site of cholesterol synthesis is the liver,[18] and, although many other tissues are capable of converting acetate to cholesterol,[19-20] none is as efficient in this synthesis as is the liver. The main sites of biosynthesis within the liver are the microsomes.[21]

There are many facets to the study of cholesterol metabolism. If one is concerned with the end products of cholesterol degradation, this sterol has been shown to be a precursor of the bile acids, adrenocortical hormones, and the sex hormones. It is also possible to study its transport: either the mechanism by which it enters the general circulation or as part of the lipoprotein complex found in the serum.

Most studies that have been carried out in the past or that are in progress today are related to some aspect of atherosclerotic heart disease. The study of the cholesterol-atherosclerosis interrelationship is almost directly due to the studies of Anitschkow and Chalatow,[22] who showed that feeding cholesterol to rabbits caused lesions in the aorta which resembled those occurring in atherosclerosis in human be-

ings. It is not the purpose of this exposition to argue the points of resemblance and discrepancy of human and rabbit lesions, although there is a wealth of literature concerning this point. Nor will we concern ourselves here with the place of cholesterol in the etiology of atherosclerosis in human beings or animals. Another controversy that will be skirted concerns itself with the animal of choice for experiments in experimental atherosclerosis. We need only agree that some relationship must exist between cholesterol and atherosclerosis, and we will have a sufficient basis to describe the work that follows.

Of all the vast literature on cholesterol, the phase that covers the question of cholesterol and heart disease is by all odds the most voluminous. I shall not attempt to cover the field nor even to review it. Certainly the work under discussion will not be the most important or provocative. I shall merely attempt to describe a few of the experiments performed by my colleagues and myself that may bear on the problem.

Much of this work was carried out with the aid of radioactive tracers, and here one final digression may be in order. Cholesterol may be labeled in many ways by several isotopes. It is possible to replace certain designated carbon atoms of cholesterol with radioactive carbon atoms and thus obtain cholesterol labeled in a specific position. Such a compound is of great value in following very specific conversions, and a good deal of important information has thus been obtained. Cholesterol has been prepared, labeled specifically at positions 4,[23] 21,[24] 24,[25] and 26.[26] If one is less particular, cholesterol may be prepared biosynthetically using a substrate such as acetate and either a tissue preparation or an intact animal. By feeding sodium acetate to a laying hen, it was possible to obtain randomly labeled cholesterol in good yield and of relatively high specific activity.[27,28] Using exchange reactions it is also possible to label the hydrogen atoms of cholesterol with isotopic hydrogen in the form of deuterium [29] or tritium.[30,31] When cholesterol labeled with hydrogen is used in metabolic experiments, the question of the stability of the hydrogen atoms is often raised. To answer this repetitious charge a mixture of carbon and tritium-labeled cholesterol was administered to a rabbit and blood samples were taken daily for 10 days, after which the animal was sacrificed.[32] The cholesterol in each daily blood sample was assayed for both carbon [14] and hydrogen [3,33] and the ratio of the radioactivities of the two isotopes was compared. The ratio obtained in each case compared well with the initial H^3/C^{14} ratio of 33:1, as can be seen in table I. These results showed tritium-labeled cholesterol to be a suitable tracer compound for biological investigations of many aspects of cholesterol absorption and turnover, a finding that recently has been confirmed in man by Werbin and his co-workers.[34]

A focal point of debate in discussions concerning cholesterol in relation to atherosclerosis is the role of exogenous versus endogenous cholesterol in the pathogenesis of this disease. It is argued that the amount of dietary cholesterol is small in comparison with that synthesized in the body and thus it must be relegated to a minor role. The fact that dietary cholesterol profoundly affects the ability of dogs,[35] rabbits,[35] and rats [36] to synthesize cholesterol suggests that the dietary contribution is indeed significant. To examine some facets of this hypothesis, we set up an experiment in which cholesterol-fed rabbits were fed tritium-labeled cholesterol or were given injections of tritium-labeled water, in order to label the body water.[37] The results in 4 cases are tabulated in table II.

These animals had been maintained on hypercholesterolemic regimens for several months prior to the labeling experiment. The salient points here are: first, that exogenous cholesterol forms the bulk of the cholesterol found in the atheromatous deposits occurring in cholesterol-fed rabbits, and, second, that cholesterol synthesis in the rabbit persists even in the face of massive, prolonged cholesterol feeding. Morris and co-workers [38] have recently shown that in the cholesterol-fed rat the biosynthetic contribution to the serum cholesterol is between 10 and 20 per cent.

In another experiment, the effect of orally

TABLE I

Specific Activities of H^3 and C^{14} Recovered from Serum Cholesterol of Rabbit Fed Cholesterol-H^3-C^{14}

Day	H^3 (X10^{-4} μc/Mg.)	C^{14} (X10^{-4} μc/Mg.)	H^3/C^{14}
1	170	5.32	31.9
2	186	6.23	29.9
3	170	5.39	31.6
4	150	4.40	34.1
5	131	3.67	35.7
6	108	3.30	32.7
8	92	2.94	31.3
10	81	2.58	31.4
Original dose	—	—	33.0

TABLE II

Radioactivity Distribution in Hypercholesterolemic Rabbits Fed Cholesterol-H³ or Injected with H_2^3O: Thirty Day Study

	Rabbit No. (Sex)			
	8 (F)	9 (F)	10 (M)	11 (F)
Starting serum cholesterol (mg./100 cc.)	1277	1250	1250	458
Final serum cholesterol (mg./100 cc.)	1326	1140	760	490
Labeling mode	Sterol	Sterol	Water	Water
Atheromata	+3	+3	+4	+1
Aorta cholesterol (mg.)	6.0	4.0	11.5	1.8
Specific activities (cholesterol)				
Serum	3.83	3.05	0.38	0.33
Brain	0.14	0.08	0.28	0.18
Lung	3.06	2.98	0.34	0.35
Liver	3.68	2.62	0.27	0.29
Kidney	3.10	2.66	0.32	0.24
Adrenal	2.99	2.46	0.20	0.13
Gonads	1.47	0.68	0.65	1.13
Jejunum	1.34	1.33	0.58	0.77
Aorta	3.45	2.64	0.22	0.33

administered squalene on experimental atherosclerosis was studied.[39] Channon [40] had shown that the livers of rats maintained on a diet containing this hydrocarbon showed a threefold increase in nonsaponifiable material and a concomitant 100 per cent increase in cholesterol content. Since this compound has been implicated as a precursor in cholesterol biogenesis,[41] it could serve as a source of endogenous cholesterol, but one much further along in the synthetic scheme than most normal dietary components. It may be seen from table III that this triterpene has no effect on experimental atherosclerosis. Altschul [42] has indicated that some lipid deposition may be detected in the tissues of rabbits after very prolonged squalene feeding.

The general distribution of ingested cholesterol is another topic of considerable interest.

TABLE III

Squalene Feeding in Rabbits

Diet	Duration, Wk.	Liver		Average Atheromata
		Wt., Gm.	Cholesterol, %	
N*	7	68	0.2	0.05
N+squalene†	7	91	0.2	0.25
N+squalene†	14	67	1.7	0.13
N+cholesterol†	7	90	8.2	2.50
N+cholesterol† +squalene†	7	99	8.4	2.70

* N=normal.
† =3%.

This material is poorly absorbed, with almost 50 per cent of a tracer dose being excreted in a relatively short time by man,[43] rats,[44] or chickens.[45] Since man is the most interesting of these species, let us consider the results of a few experiments in human beings. Elegant studies of cholesterol metabolism and biosynthesis in man have been carried out by Hellman and co-workers.[46] In general, the curve of free cholesterol-specific activity in the blood reaches a peak earlier than does that of ester cholesterol, but after a few days the latter achieves a higher radioactivity. One aspect of our work involved the determination of cholesterol-specific activity in various classes of the serum lipoproteins. Gofman and co-workers [47] have described a method for the ultracentrifugal determination of various classes of serum lipoproteins which are characterized by their varying flotation rates in a medium of density, 1.063. These different lipoprotein classes are designated by their flotation rates from S_f0 to S_f400, where the higher flotation rate indicates a lipoprotein fraction of lower density. Gofman and co-workers [48] have discussed the implications of their findings in the etiology and diagnosis of atherosclerosis, and no just discussion is possible in a short time. In one case, a serum sample obtained 24 hours after a single tracer feeding was separated into four distinct fractions; the results are noted in table IV. A rapid equilibration between the

TABLE IV

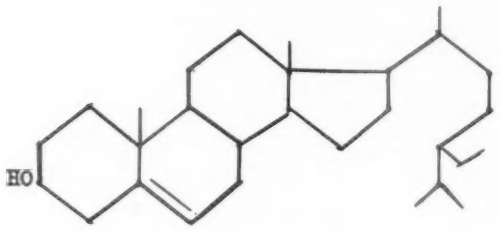
Serum Lipoproteins Separated Twenty-Four Hours after Cholesterol–H³ Feeding

Class	Cholesterol Specific Activity (Mc./Gm.)
S_f 3-7	11.0
S_f 10-13	11.0
S_f 17	10.3
S_f 20+	10.9

sterol in these lipoproteins is indicated. In another instance, a 62 year old man was given a dose of cholesterol-H³ in an oil-milk emulsion one week after suffering a cerebral accident. Forty-three days later the patient died and an autopsy was performed. The thickened intima of the aorta (36.0 Gm.) was obtained, and from this source 1.31 Gm. of cholesterol, with a specific activity of 0.03 μ per Gm., was obtained. Calculations show that this amount of radioactivity could not possibly be due to

blood or lymph in the processed sample, and this experiment constitutes a qualitative demonstration of exogenous cholesterol entering into the metabolism of the man's atherosclerotic aorta.

A subject of great current interest in the field of atherosclerosis is the use of soybean sterols or β-sitosterol as a means for lowering serum cholesterol. The hypocholesterolemic effect of these sterols has been observed in cholesterol-fed chickens,[49] rabbits,[50] and man.[51]



Sitosterol

The effect has been explained as an interference phenomenon, with the sitosterol competing with cholesterol for esterification substrates. There is now a large volume of literature on this subject and no review is intended. We have performed one tracer experiment in cholesterol-fed rats which lends credence to the interference theory.[52] Three groups of 4 rats were used. One group was fed cholesterol (3 per cent) plus soy sterols (5 per cent) and the other two were fed cholesterol (3 per cent). Each rat was given 10 mg. of labeled cholesterol by stomach tube. In one group given cholesterol, this feeding was immediately followed by 1 Gm. of mixed soy sterols in corn oil. The animals were maintained on a normal diet for four days, with feces and urine being collected during this period. The rats were then sacrificed and the livers and excreta assayed for radioactivity (table V).

The greater excretion and lessened liver deposition of the administered cholesterol-C^{14} seems to be related to the soy sterol content of the intestine, since we may assume that a considerable amount of the soy sterol fed to the last group was present in the digestive system of these animals.

Finally, I should like to touch on the subject of dietary fat and cholesterol absorption. As you are no doubt aware the current literature is replete with references to the beneficial effect of unsaturated dietary fat. Again I shall describe briefly a few experiments carried out in this area in which rabbits were fed cholesterol plus fats of varying degrees of saturation. In the first experiment the diets contained cholesterol (3 per cent) sprayed on the food in a volatile solvent, cholesterol in corn oil, and cholesterol in a solid, commercial shortening.[53] There were 15 rabbits in the first group and 14 in the other two groups (table VI).

It can be seen from table VI that partially saturated fat is almost as bad as no fat at all and that, in these animals, the serum cholesterol values are not indicative of the extent of atherosclerotic involvement.

In an effort to refine our experiments we used three pure fatty acid esters as the cholesterol vehicle and graded the lesions in the thoracic aorta and the arch separately.[54] Again, rabbits on a 3 per cent cholesterol diet were used, and in this experiment 9 animals were used in each group. The data are presented in table VII.

TABLE VI
Fat and Cholesterol: First Experiment

Fat *	Iodine Value	Atheromata	Serum Cholesterol (Mg./100 Cc.)
		3.80	2,000
Shortening	72	3.71	3,990
Corn oil	130	2.71	3,150

* All diets contain 3% cholesterol. Duration, 8 weeks.

TABLE V
Percentage of Administered C^{14} Recovered After Feeding Cholesterol–C^{14} (Average)

Prefeeding*	Label	Feces (%)		Liver (%)		
		Nonsaponifiable	Acid	Nonsaponifiable	Acid	Total
Cholesterol	cholesterol–C^{14}	20.1	1.0	6.6	0.5	28.2
Cholesterol	cholesterol–C^{14} + soy sterols	25.1	1.5	1.8	0.6	29.0
Cholesterol + soy sterols	cholesterol–C^{14}	27.8	1.9	0.5	0.6	30.8

* Prefeeding period=120 days.

TABLE VII
Fat and Cholesterol: Second Experiment

Fat	Iodine Value	Atheromata		Serum Cholesterol (Mg./100 Cc.)
		Arch	Thoracic	
Me stearate	0	2.78	1.78	2,167
Me oleate	90	2.67	1.11	2,337
Me 9-11 octadienoate	147	2.44	0.94	2,578

These results are suggestive of a beneficial effect of unsaturation, and again we see the lack of correlation between serum cholesterol values and atherosclerotic involvement. These results are not as clearly defined as those obtained in human beings by Ahrens and co-workers [55] and Bronte-Stewart and co-workers,[56] but they point in the same direction.

The foregoing has been a brief, uncritical romp through the very wide field of cholesterol metabolism. I have taken advantage of your indulgence to cite experiments with which I am most familiar but hasten to point out that these are far from being the most thorough studies of their kind. Cholesterol metabolism will be studied for some time before the complex interrelationships are understood. Its connection with atherosclerosis, while generally conceded, is still ill-defined, and further clarification must await work more fundamental in nature than that which I have described.

REFERENCES

1. Chevreul, M. E.: Recherches chimiques sur plusiers corps gras, et particulièrment sur leurs combinasions avec les alcales. V. Des corps qu'on a appeles adipocere, c'est-à-dire de la substance cristallisée des claculs biliares humains, du spermacéti et de la substance grasse des cadavres, Ann. de chim. et phys. *95*:5-50, 1815.

2. Boudet, F.: Nouvelles recherches sur la composition du serum du sang humain, Ann. de chim. et phys. *52*:337-348, 1833.

3. Couerbe, J. P.: Du cerveau, considéré sous le point de vue chimique et physiologique, Ann. de chim. et phys. *56*:160-193, 1834.

4. Lecanu, L. R.: Sur l'existence de la cholestérine dans l'huile de jaunes d'oeufs, J. de pharm. et chim. *15*:1-5, 1829.

5. Gobley, M.: Recherches chimiques sur le jaune d'ouef, J. de pharm. et chim. *9*:5-19, 81-91, 1846.

6. Dezani, S.: Researches on the genesis of cholesterol. II Arch. di farmacol. sper. *17*:4-12, 1913; Chem. Abstr. *8*:1813, 1914.

7. Dezani, S., and Cattoretti, F.: New researches on the genesis of cholesterol, Arch. di farmacal. sper. *19*: 1-9, 1915; Chem. Abstr. *9*:1338, 1915.

8. Gamble, J. L., and Blackfan, K. D.: Evidence indicating a synthesis of cholesterol by infants, J. Biol. Chem. *42*:401-409, July, 1920.

9. Beumer, H., and Lehmann, F.: Cholesterol synthesis in the animal body, Ztschr. ges. exper. Med. *37*:274-280, 1923; Chem. Abstr. *18*:3206, 1924.

10. Channon, H. J.: Cholesterol synthesis in the animal body, Biochem. J. *19*:424-432, 1925.

11. Rittenberg, D., and Schoenheimer, R.: Deuterium as an indicator in the study of intermediary metabolism. XI. Further studies on the biological uptake of deuterium in organic substances, with special reference to fat and cholesterol formation, J. Biol. Chem. *121*:235-253, Oct., 1937.

12. Bloch, K., and Rittenberg, D.: The biological formation of cholesterol from acetic acid, Letters to the Editor, J. Biol. Chem. *143:* 297-298, March, 1942.

13. Bloch, K., and Rittenberg. D.: On the utilization of acetic acid for cholesterol formation, J. Biol. Chem. *145*:625-636, Oct., 1942.

14. Cornforth, J. W.; Hunter, G. D., and Popjak, G.: Studies of cholesterol biosynthesis. 1. A new chemical degradation of cholesterol, Biochem. J. *54:* 590-597, July, 1953.

15. Cornforth, J. W.; Hunter, G. D., and Popjak, G.: Studies of cholesterol biosynthesis. 2. Distribution of acetate carbon in the ring structure, Biochem. J. *54*:597-601, July, 1953.

16. Cornforth. J. W.; Youhotsky-Gore, I., and Popjak, G.: The origin of the carbon atoms of cholesterol, Proceedings of the Biochemical Society, Biochem. J. *64*:38P, 1956.

17. Cornforth, J. W., and Popjak, G.: Studies on the biosynthesis of cholesterol. 3. Distribution of ^{14}C in squalene biosynthesized from (Me-^{14}C) acetate, Biochem. J. *58*:403-407, Nov., 1954.

18. Bloch, K.; Borek, E., and Rittenberg, D.: Synthesis of cholesterol in surviving liver, J. Biol. Chem. *162*:441-449, March, 1946.

19. Srere, P. A.; Chaikoff, I. L., and Dauben, W. G.: The in vitro synthesis of cholesterol from acetate by surviving adrenal cortical tissue, J. Biol. Chem. *176*:829-833, Nov., 1948.

20. Srere, P. A.; Chaikoff, I. L.; Treitman, S. S., and Burstein, L. S.: The extrahepatic synthesis of cholesterol, J. Biol. Chem. *182*:629-634, Feb., 1950.

21. Bucher, N. L., and McGarrahan, K.: The biosynthesis of cholesterol from acetate-1-C14 by cellular fractions of rat liver, J. Biol. Chem. *222*:1-15, Sept., 1956.

22. Anitschkow, N., and Chalatow, S.: Ueber experimentelle Cholesterinsteatose und ihre Bedeuting für die Entstehung einiger pathologischer Prozesse, Zentralbl. allg. Path. *24*:1-9, 1913.

23. Dauben, W. G., and Eastham, J. F.: On the conversion of cholestenone to cholesterol, Communications to the Editor, J. Am. Chem. Soc. *72*:2305, May, 1950.

24. Kurath, P., and Capezzuto, M.: A method for the synthesis of C_{21}—labeled cholesterol, J. Am. Chem. Soc. *78*:3527-3529, July 20, 1956.

25. Dauben, W. G., and Payot, P. H.: An improved method of preparation of side-chain labeled cholesterol, J. Org. Chem. *21*:1299, 1956.

26. Dauben, W. G., and Bradlow, H. L.: The preparation of cholesterol from Δ^5-norcholestene-3 β-OL-25-one, J. Am. Chem. Soc. 72:4248-4250, Sept., 1950.

27. Kritchevsky, D.; Grau, C. R.; Tolbert, B. M., and Krueckel, B. J.: Distribution of radioactivity in the egg after feeding sodium acetate-1-C^{14}, Proc. Soc. Exper. Biol. & Med. *76*:741-743, April, 1951.

28. Kritchevsky, D., and Kirk, M. R.: Radioactive eggs. II. Distribution of radioactivity in the yolks, Proc. Soc. Exper. Biol. & Med. *78*:200-202, Oct., 1951.

29. Bloch, K., and Rittenberg, D.: The preparation of deuterio cholesterol, J. Biol. Chem. *149*:505-509, Aug., 1943.

30. Kritchevsky, D.; Biggs, M. W., and Freeman, N. K.: Preparation of tritiated cholesterol, University of California Radiation Laboratory, Report No. 644, 1950.

31. Wilzbach, K. E.: Tritium-labeling by exposure of organic compounds to tritium gas, J. Am. Chem. Soc. *79*:1013, Feb. 20, 1957.

32. Biggs, M. W., and Kritchevsky, D.: Observations on the suitability of tritium-labeled cholesterol for the study of cholesterol metabolism, Arch. Biochem. *36*:430-433, April, 1952.

33. Biggs, M. W.; Kritchevsky, D., and Kirk, M. R.: Assay of samples doubly labeled with radioactive hydrogen and carbon, Analyt. Chem. *24*:223-224, Jan., 1952.

34. Werbin, H.; Bergenstal, D. M.; Gould, R. G., and LeRoy, G. V.: Evaluation of tritium cholesterol as a tracer in man, J. Clin. Endocrinol. *17*:337-345, March, 1957.

35. Gould, R. G., and others: Cholesterol metabolism. 1. Effect of dietary cholesterol on the synthesis of cholesterol in dog tissue in vitro, J. Biol. Chem. *201*:519-528, April, 1953.

36. Tomkins, G. M.; Sheppard, H., and Chaikoff, I. L.: Cholesterol synthesis by liver. III. Its regulation by ingested cholesterol, J. Biol. Chem. *201*:137-141, March, 1953.

37. Biggs, M. W., and Kritchevsky, D.: Observations with radioactive hydrogen (H^3) in experimental atherosclerosis, Circulation *4*:34-42, July, 1951.

38. Morris, M. D., and others: The origin of serum cholesterol in the rat: Diet versus synthesis, J. Biol. Chem. *224*:1039-1045, Feb., 1957.

39. Kritchevsky, D., and others: Squalene feeding in experimental atherosclerosis, Circulation Res. *2*: 340-343, July, 1954.

40. Channon, H. J.: The biological significance of the unsaponifiable matter of oils. I. Experiments with the unsaturated hydrocarbon squalene (spinacene), Biochem. J. *20*:400-408, 1926.

41. Langdon, R. G., and Bloch, K.: The utilization of squalene in the biosynthesis of cholesterol, J. Biol. Chem. *200*:135-144, Jan., 1953.

42. Altschul, R.: Personal communication to the author.

43. Biggs, M. W., and others: Observations on the fate of ingested cholesterol in man, Circulation *6*: 359-366, Sept., 1952.

44. Kritchevsky, D.; Kirk, M. R., and Biggs, M. W.: Metabolism of radioactive cholesterol in the intact rat, Metabolism *1*:254-258, May, 1952.

45. Kritchevsky, D.; Fahrenbach, M. J., and Grant, W. C.: Unpublished observations.

46. Hellman, L.; Rosenfeld, R. S., and Gallagher, T. F.: Cholesterol synthesis from C14—acetate in man, J. Clin. Invest. *33*:142-149, Feb., 1954.

47. Gofman, J. W., and others: The role of lipids and lipoproteins in atherosclerosis, Science *111*:166-171, 186, Feb. 17, 1950.

48. Gofman, J. W., and others: Lipoproteins and atherosclerosis, J. Gerontol. *6*:105-119, April, 1951.

49. Peterson, D. W.: Effect of soybean sterols in the diet on plasma and liver cholesterol in chicks, Proc. Soc. Exper. Biol. & Med. *78*:143-147, Oct., 1951.

50. Pollak, O. J.: Successful prevention of experimental hypercholesteremia and cholesterol atherosclerosis in the rabbit, Circulation 7:696-701, May, 1953.

51. Best, M. M.; Duncan, C. H.; Van Loon, E. J., and Wathen, J. D.: Lowering of serum cholesterol by the administration of a plant sterol, Circulation *10*:201-206, Aug., 1954.

52. Burke, K. A.; McCandless, R. F. J., and Kritchevsky, D.: Effect of soybean sterols on liver deposition of cholesterol-C14, Proc. Soc. Exper. Biol. & Med. *87*:87-88, Oct., 1954.

53. Kritchevsky, D., and others: Effect of cholesterol vehicle in experimental atherosclerosis, Am. J. Physiol. *178*:30-32, July, 1954.

54. Kritchevsky, D., and others: Cholesterol vehicle in experimental atherosclerosis. II. Influence of unsaturation, Am. J. Physiol. *185*:279-280, May, 1956.

55. Ahrens, E. H., Jr.; Blankenhorn, D. H., and Tsaltas, T. T.: Effect on human serum lipids of substituting plant for animal fat in diets, Proc. Soc. Exper. Biol. & Med. *86*:872-878, Aug.-Sept., 1954.

56. Bronte-Stewart, B.; Antonis, A.; Eales, L., and Brock, J. F.: Effects of feeding different fats on serum cholesterol levels, Lancet *1*:521-526, April 28, 1956.

Surgery and the Geriatric Patient*

Adele Gecht, M.D., F.A.C.S.

ORIENTATION TOWARD SCIENTIFIC STUDY OF the aging process is developing rapidly in both medical and nonmedical fields, although the concept of senescence and when it begins is not established. Parsons and associates made a study of major surgery in patients 60 years of age and over, and subsequently reviewed its status in patients 70 years of age and over. They stated: "The 60 year old patient today is no longer considered aged." [1] Whether we consider geriatric problems to start at 60 or 70 years of age, or whatever other criteria we may use, increased longevity has made geriatricians of all of us to some degree. Investigative studies and a pooling of clinical experience aid us in our approach to the problems of aging. It is as a clinician that I should like to discuss therapeutic handling of the geriatric patient undergoing surgery.

Advances in surgery during the past decade have been important and are based not only on improvements in technique but also on the advent of antibiotics, a greater understanding of surgical physiology, a knowledge of fluid and electrolyte balance, anesthesiology, and the newer application of steroid therapy. The benefit to the geriatric patients is reflected in the encouraging decrease in morbidity and mortality of this group, so that surgery previously not possible has been made accessible to them. Although we may expect the morbidity and mortality rate to be higher in this group, it must be reasonable. An analysis of some important factors contributing to surgical failure will serve the progress already made and result in the further improvement or actual elimination of these catastrophes.[2]

We first must consider the element of delay. If the patient puts off seeking help or if, as often happens in the elderly, the clinical picture is atypical and deceptively mild in the presence of serious disease, there is a resultant delay in the diagnosis and the definitive surgical treatment. Delay also can be due to the physician who uses age alone as the basis of a decision against surgery, with the consequence that a patient suffers from his disease too long and a poor or hopeless condition results. A second factor is the elderly patient's diminished adaptability to stress. A complication can reverse what otherwise might have been a successful outcome. A third factor is the higher incidence in these patients of catastrophic diseases whose surgical treatment normally has a higher mortality. A fourth factor is the notable susceptibility of the circulatory system of the aged to strain or trauma. Shock and hemorrhage are poorly tolerated and wherever possible must be prevented rather than treated.

Emergency surgery is withstood less well than elective surgery. The emergency situation may be unavoidable; on the other hand, it may be a sequel of delay in dealing with an elective problem. This emphasizes the fact that a clinician must be able to prognosticate the potentialities of a disease. Although this demand for prognosis cannot be met with exact scientific accuracy, clinical experience and judgment aid us in predicting what the presence of a pathological condition may mean to

* Presented as part of a Panel Discussion on Geriatrics before the AMWA, Branch Two, Feb. 13, 1957.

Dr. Gecht is Attending Surgeon at Mary Thompson Hospital, Chicago, Associate Attending Surgeon at Illinois Masonic Hospital, Chicago, and Associate in General Surgery, Chicago Medical School.

a patient in the future. "If it doesn't bother me, I won't bother it" should be modified to read, "If it doesn't bother me and won't bother me in the future, I won't bother it." An example of this is the patient who presents a femoral herna as a wholly incidental finding.

What type of problems does the surgeon face in the geriatric patient? What should be the advice if (1) the condition is benign and without complication, (2) complication is present, (3) the disease is malignant and amenable to surgical therapy, or if (4) an emergency situation is present? How does it affect our thinking when the clear indications for surgical intervention as they exist in obstructive jaundice are present in an 80 year old patient; when intestinal obstruction due to a gallstone is found in an 80 year old patient; when a carcinoma of the rectum and a partial intestinal obstruction are identified in a patient 72 years of age; or when a complete pyloric obstruction due to a carcinoma of the stomach is encountered in a 90 year old woman? At times the decision is made for us, as in the case of the 90 year old patient. When it was explained to her that the mechanical block could not be relieved by means other than surgery, she stated that she was too old. After a month of struggle with the consequences of her obstruction, she apparently felt that age was not the deciding factor, and an anterior gastroenterostomy was performed for this nonresectable carcinoma. The patient survived only three months but during this time was on oral intake and in greater comfort than in the preoperative period. The remaining patients were completely rehabilitated except for the one with ileus due to a gallstone. She died in her sleep on the fourth postoperative day after what appeared to be an uneventful postoperative course. Permission for autopsy was not obtained.

The factor of older age should not distort our basic principles of approach. The focal point must be the patient's disease and its capacity for development. These diseases may range from those of less debatable nature, such as, appendicitis, carcinoma, and complicated gall bladder disease, to the more controversial, such as, silent cholelithiasis, benign inflammatory diseases of the colon, and arteriosclerotic aneurysms of the aorta. It is then important to consider the disease with its meaning to the patient's welfare in the framework of the patient as a whole. Age now becomes significant, because we are aware that the incidence of degenerative changes will increase with age. It behooves us, therefore, to make a careful clinical and laboratory evaluation of the cardiac, pulmonary, and renal reserves of each patient. The equation becomes the disease, its therapy, and the patient. The morbidity and mortality of both the disease and its treatment is balanced against the aggregation of factors in the patient that intimate risk. I do not mean to imply that this is a mathematical equation that can be solved with scientific exactitude, but the afore-mentioned are points of orientation, which can produce a more intelligent program for the patient, although infallible conclusions may not be reached.

LaDue [3] states that, in the major contraindications to surgery in the aged, we must include myocardial infarction, congestive heart failure, uncontrolled arrhythmias, active myocarditis, bacterial endocarditis, cardiomegaly, and heart block with Stokes-Adams syndrome. However, these are considered generally to be contraindications to surgery at any age.

Even in the presence of adverse circumstances, there are pathological states that require surgical intervention, such as, acute appendicitis. Although the general circumstances may be more favorable in some other disease states, their surgical treatment may be more controversial.

Operation for hernias should not be postponed when diagnosed in the younger patient as pathological features often multiply as the patient ages. However, if the elderly patient has a hernia and there are no medical contraindications, it should be surgically repaired; one can always depend on its getting worse, never better.

Surgical intervention for asymptomatic gallstones in the elderly patient is not advised; however, if symptoms are present, even though mild, one should seriously consider this form of therapy for a disease that experience has shown to be treacherous. For example, a woman who previously had an appendiceal mass that "melted away" with antibiotic therapy was scheduled to have an appendectomy. Although the patient had no symptoms referable to her gall bladder, nonvisualization was obtained by roentgen-ray study. The gall bladder, however, was not removed at the time of appendectomy. Three years later the patient had obstructive jaundice; at this time, a cholecystectomy was done and a common bile duct stone was removed. Another patient had an extensive involvement of the descending

colon and sigmoid with diverticulitis. It was necessary to remove the descending colon, sigmoid, upper rectum, and the uterus and tubes, which had become fused with the inflammatory mass, and to do an end-to-end anastomosis of the transverse colon with the upper portion of the rectum. Exploration had revealed a thickened gall bladder filled with stones, but under the circumstances it was considered inadvisable to extend the surgical procedure in this 68 year old patient. During her immediate postoperative course she was questioned closely regarding symptoms referable to the diseased gall bladder but would admit only to episodes of belching and "gas"; yet, within a month she was rehospitalized for a ruptured empyema of the gall bladder. Another patient, during a pelvic operation was noted to have a thickened gall bladder with stones and was advised to have it removed. This she refused because she had been completely asymptomatic for a period of five years. In another five years she presented obstructive jaundice, which was relieved by cholecystectomy and removal of common bile duct stones. These are but a few examples chosen from experience in a routine surgical practice and must therefore also represent the experience of others.

Complications involving the cardiopulmonary apparatus predominate in the geriatric group. There also is a higher incidence of cerebral decompensation, which usually manifests itself as temporary mental confusion. This is probably due to a constellation of contributing factors, such as, physiological strain, anoxia, and arteriosclerosis. Careful preoperative and postoperative management is a *sine qua non*. All complicating diseases must be treated. Fluid and electrolyte balance must be maintained, although it is important not to be overzealous as it is easy to overload these patients, which may prove fatal. Expert anesthesia cannot be overemphasized. Cerebral and cardiac anoxia are poorly tolerated.

The threshold for pain in the geriatric group tends to be higher than in other age groups. Although this may have disadvantages, in the postoperative period it is probably a reason why it is usually not difficult to mobilize these patients. I have been most impressed with the necessity of getting these patients back to normal as soon as it is compatible with the type of surgery. However, it is difficult to mobilize a patient with tubes protruding from each body orifice. After I had observed some of these patients take matters into their own hands by removing Levin and intravenous tubes, by getting up and being about, and by drinking anything that might be in sight, and recover, it occurred to me that perhaps they were getting well because of this mobilization rather than in spite of it. A consequence of the careful scrutiny of these incidents was an innovation of therapeutic philosophy applicable not only to the geriatric group but to all adult groups. For example, an obstructive colostomy as part of an abdominoperineal procedure presumably allowed the operative wound to seal off, thereby preventing either peritoneal or wound contamination. Decompression was effected by Levin suction, and the patient was maintained on parenteral fluids. This deliberate, but temporary, obstruction is poorly tolerated after a major operative procedure, as it increases the problems of fluid and electrolyte replacement, delays adequate physical mobilization, and may initiate reflex cardiac phenomena. The same principles are involved when a loop colostomy is done for an acutely obstructive lesion. Instead of waiting for the wound to seal off, the patient, already in jeopardy with an acute large-intestine obstruction, is immediately decompressed, and a small opening is left in the colostomy loop to allow at least for the escape of flatus. Because this opening tends to seal off, it is dilated carefully several times in a 24 hour period to allow this escape.

Levin suction is a therapeutic advance, but one has to be careful not to abuse it, keeping in mind the value of the fluid and electrolytes of the intestinal tract in the homeostasis of the body organism. Thus, after a gastric resection, the anastomotic line will hold and tolerate well not only the normal and valuable secretions of the upper gastrointestinal tract but also the early oral intake of fluid in measured amounts. This is not true, of course, if hemorrhage, obstruction, or other complicating factors are present. In intestinal surgery, with the intestine well prepared, with its blood supply definitely adequate, and in the absence of tension, the anastomosis will sustain well a normal volume of intestinal secretions, gas, and physiological peristalsis, so that the need for Levin suction may be of short duration or completely nonexistent. With these principles in mind, we try not to compound therapeutic burdens in the aged.

A patient may appear to be doing well up to a point and then reach what may be consid-

ered a plateau in his progress. A cautious use of steroids at this time often stimulates the patient's appetite and sense of well-being, encouraging further progress.

SUMMARY

In conclusion, I should like to emphasize the following points:

1. Geriatrics is not a completely divorced segment of medicine or surgery. It may be that elderly patients often do much better than younger ones because the basic principles of general surgery are more carefully adhered to in the therapy of the aged.

2. Age per se is not a contraindication to surgery.

3. We must not allow the elderly patient to suffer from his disease so long that he is in a poor or hopeless condition due to this delay.

4. In advising the elderly patient for or against surgery we should balance the disease with its implications and potentialities and the treatment with its morbidity and mortality and the factors in the patient that affect the surgical risk.

5. We must keep the therapeutic burdens in the aged to a minimum, but we must keep them compatible with the surgery performed.

6. We must not deny therapy, albeit surgery, to our community of aging citizens for diseases that may be benefited.

REFERENCES

1. Parsons, W. H.; Whitaker, H. T., and Hinton, J. K.: Major surgery in patients 70 years of age and over: An analysis of 146 operations on 135 patients, Ann. Surg. *143*:845-854, June, 1956.

2. Limbosch, J.; Experiences with more than one thousand elderly surgical patients, A.M.A. Arch. Surg. *73*:124-132, July, 1956.

3. LaDue, J. S.: Evaluation and preparation of the patient with degenerative cardiovascular disease for major surgery, Bull. New York Acad. Med. *32*:418-435, July, 1956.

Perinatal Deaths

Perinatal mortality, the death of infants before or soon after birth, continues to be a major medical problem, according to a recent study by the Metropolitan Life Insurance Company. In recent years perinatal deaths have averaged more than 135,000 a year in the United States. Approximately half of these are stillbirths, and the remaining half are babies dying within one week of birth.

Some progress has been made in reducing the perinatal mortality rate—it fell about one-third between 1940 and 1954, but the improvement has lagged far behind that for childbirth mortality among mothers, which decreased 86 per cent in the same period.

The major factors contributing to the death toll in the perinatal period, the study shows, are: lack of early and adequate prenatal care; twin and other plural births; puerperal toxemia; chronic and infectious diseases in the mother; and the use of inadequately trained midwives, a practice that is still fairly common in some sections of the country. Cesarean births, while quite safe for the mother, are still attended with high risk to the infant.

Better Health For City Children

The problem of health services for city children, particularly in countries where industries are developing rapidly, was discussed recently by a joint committee of the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO).

The situation of child health in cities and towns poses a serious problem, since families crowding into fringe areas around new cities very often live in hygienic conditions worse than those existing in the villages. There are no opportunities for them to produce their own food, and they lack sunshine and fresh air. Mothers tend to give up traditional ways of feeding and caring for children, but do not have sufficient knowledge or the financial means to follow modern methods.

In tackling the problem on the international level, WHO and UNICEF experts felt that the training of health personnel—doctors, nurses, midwives, and other auxiliaries—was of first importance, and that training programs run by the two organizations could have a decisive influence on the improvement of health services. They also stressed the need, in WHO-UNICEF health programs, for providing diets rich in proteins for children at the time of weaning. (*UNESCO*)

Ataxic Form of Poliomyelitis

Edward B. Shaw, M.D.

THE EARLY DESCRIPTIONS OF POLIOMYELITIS, which led to the final differentiation of this infectious disease, sometimes included an ataxic form of symptomatology. Wickman,[1] whose monograph remains valuable source material for students of this disease, included the ataxic form as one of eight major categories into which most of the symptoms fell. In his classification Wickman included: (1) the spinal, poliomyelitic form, (2) the cases simulating Landry's paralysis, (3) the bulbar or pontine form, (4) the encephalitic form, (5) the ataxic form, (6) the neuritic form, (7) the meningeal form, and (8) the abortive cases.

Most modern observers, having discarded more or less much of Wickman's classification, include only lower motor neuron paralysis of spinal or bulbopontine origin and prefer the term "nonparalytic" to "abortive" to include those cases of nondescript symptomatology in which the specific etiology is satisfactorily established.

Landry's paralysis is simply a pattern of anatomic involvement of no special significance. The encephalitic form is occasionally recognized in a minority of patients, although many of these patients actually have bulbopontine paralysis with anoxic damage of higher centers. The neuritic form is rarely mentioned, but sensory loss now is believed to be a most unusual and dubious symptom. Meningeal irritative symptoms as a single symptom now are explained more frequently by the action of other viruses and microbial agents that have been identified since Wickman's time.

Dr. Shaw is Chairman, Department of Communicable Diseases, Children's Hospital, San Francisco, and Clinical Professor of Pediatrics, University of California School of Medicine, San Francisco.

Mild ataxic symptoms and muscular tremors have been described by many authors as a prelude to motor weakness. The purely ataxic form of this disease has been practically discarded by all modern authorities and is almost completely omitted from mention in current textbooks and discussions of clinical symptomatology. Ford states that he rejects the so-called cerebellar types as a form of this disease.[2]

The following case is presented to detail severe unilateral ataxia as a predominant symptom in the final diagnosis of poliomyelitis, which was most persuasively sustained by clinical and epidemiologic considerations.

CASE REPORT

A 41 year old white woman, the mother of six children, was referred to Children's Hospital on Aug. 11, 1956, with a diagnosis of possible poliomyelitis. Her previous history was essentially noncontributory. She had a vague history of soreness about the right shoulder and neck for two weeks prior to admission, but she did not especially relate this to the present illness. Three days before admission she developed fever and chills and 36 hours before admission noted weakness and difficulty in controlling movements of her left arm and leg. She had received chiropractic care four days before admission. For the fever and chills she had been given antibiotics.

Spinal puncture had been performed at another hospital the day of admission. The spinal fluid showed 126 white blood cells per cubic millimeter, with 15 polymorphonuclear neutrophils and 111 monocytes. The spinal fluid sugar level was 64 mg. per 100 cc. and the total protein level was 69 mg. per 100 cc.

On admission to Children's Hospital her temperature was 37.5 C (99.5 F). The patient was found to be somewhat apprehensive but extremely co-operative and lucid. Motor difficulties in the left upper and lower extremities consisted not of actual weakness but of profound unilateral ataxia and asynergia. There was questionably slight slurring of speech, but the cranial nerves otherwise were intact and the optic fundi appeared normal to repeated examination. There was no nystagmus. No loss of motor power could be demonstrated on either side of the body at this time. There was no disturbance of co-ordination in the right

upper or lower extremities, but every voluntary effort at motion in the left upper and lower extremity was extremely in-co-ordinated. There was marked past pointing to the left on the finger-nose test, and her attempts to touch the examiner's finger with her left great toe were accompanied by jerky and completely in-co-ordinated movements without any actual loss in muscular strength. When she was caused to stand, she was completely unable to control weight-bearing on the left side and staggered uncertainly to the left.

Spinal fluid examination was not repeated. The blood count was essentially normal: the leukocyte count was 7,700 per cubic millimeter, with 72 per cent polymorphonuclear neutrophils, 7 nonfilamented neutrophils, 25 per cent lymphocytes, and 3 per cent monocytes. Erythrocyte sedimentation rate was 21.5 mm. per hour. Results of urinalysis were normal. The patient was nonreactive to the Kolmer and Kahn tests, and the Mantoux (old tuberculin, 1:1000) test was negative. Roentgenograms of the skull were normal, and electroencephalography showed borderline to mildly abnormal results.

During the next 48 hours the severe cerebellar symptoms gradually became worse on the left side without any alternation in the general neurological examination. During this time the patient was seen by a neurosurgical consultant, who expressed the opinion that she had an intrinsic inflammatory process involving chiefly the cerebellar system. He did not believe there was any indication of a focal, acutely infectious expanding lesion that required surgical intervention, and recommended only careful and continued observation.

By the third hospital day the ataxic signs on the left side had become very much less marked. On the following day she was afebrile, and at this time weakness of the right anterior tibial muscle was clearly detectable. The mild remaining ataxic symptoms on the left side gradually disappeared during the next two weeks of hospital stay, and the right anterior tibial muscle weakness continued to be evident during the next six months of periodic observation. By the end of the first week there was definite muscle tightness and soreness involving the neck, back, and hamstrings in a manner quite consistent with the usual late oncoming stiffness of poliomyelitis, but this improved fairly quickly under conventional methods of physical therapy. With the appearance of right lower extremity weakness, the knee jerk on the right was diminished and the ankle jerk became almost absent, but both of these deep tendon reflexes had a rapid return to a practically normal response.

The last examination of this patient on Jan. 16, 1957, showed almost no persistent muscle spasm, and careful examination showed minimal detectable weakness, with fairly good functional strength, in the right shoulder flexor, the left pectoral muscles, both sternomastoids, the abdominal muscles, and especially in the right anterior tibial muscle.

During the early period of hospitalization it was believed that poliomyelitis was a most unlikely incitant of her symptoms. Forty-eight hours after her admission, however, her 16 year old son was admitted with symptoms definitely consistent with poliomyelitis. The previous history of this patient was essentially negative. He had not been given Salk vaccine. He had mumps at one time but no serious illness or operation. He had suffered a mild upper respiratory infection a few days previously. Acute symptoms of fever, headache, and neck and back stiffness appeared about 48 hours after the onset of his mother's illness.

On admission this boy showed definite nuchal rigidity and accompanying stiffness and soreness of the spinal musculature. Temperature was 37.5 C (99.5 F); pulse rate, 80 per minute; respirations, 18 per minute; and blood pressure, 130/65 mm. Hg. The general physical examination was essentially negative. The cranial nerves were intact, and the fundi appeared normal. Sensation was carefully tested and seemed normal throughout. The muscle power was normal. The deep tendon reflexes were bilaterally equal and active, as were the superficial reflexes and no pathological reflex reactions were elicited.

Spinal fluid at entry showed an initial pressure of 280 mm. of water, with a final pressure of 180. Erythrocyte count was 82 per cubic millimeter and the leukocyte count was 184 per cubic millimeter, with 77 per cent polymorphonuclear neutrophils and 23 per cent monocytes. Total protein level was 75 mg. per 100 cc., spinal fluid sugar level was 72 mg. per 100 cc., and the chloride level was 772 mg. per 100 cc. The blood count was as follows: hemoglobin, 15.2 Gm.; erythrocytes, 5.1 million per cubic millimeter; and leukocytes, 9,850 per cubic millimeter, with 84 per cent polymorphonuclear neutrophils, 6 nonfilamented neutrophils, 14 lymphocytes, and 2 monocytes. Urinalysis and Mantoux test were negative.

This patient became afebrile after 24 hours. At this point he developed urinary retention, requiring repeated catheterization and finally the use of a retention catheter. On the second hospital day the abdominal muscles and lower extremity muscles were diffusely weak. By the third hospital day intercostal weakness developed, requiring the use of a tank respirator. On the fourth day he had difficulty in swallowing and had a sluggish gag reflex. These bulbar symptoms were not sufficient to require a tracheotomy. During his early stay in the respirator he developed weakness of all four extremities of most severe degree. Urinary retention persisted for about two weeks and was accompanied by urinary tract infection. He was completely dependent upon the respirator for three weeks, after which he was gradually and completely weaned from this machine. He was finally discharged from the hospital 131 days after admission with typical postpoliomyelitic lower motor neuron paralysis involving all four extremities; he had some scattering return of function but an extreme degree of residual disability and a poor prognosis.

Attempts were made to secure virus isolation from the stools of both these patients, with the assistance of the State of California Virus and Rickettsial Laboratory. These proved unsuccessful. It is most regrettable that poliomyelitis virus could not thus be demonstrated. In both cases, however, the febrile course, the spinal fluid examination, the late oncoming

stiffness, and the typical muscular paralysis were entirely consistent with the clinical diagnosis of poliomyelitis. In both patients the onset of acute symptoms was closely coincidental. It is certainly most unlikely that different etiologies were involved.

COMMENT

Ataxic symptoms, and most especially sharply unilateral ataxia, are most uncommon in poliomyelitis. I have never seen ataxia of this nature, quite distinct from the muscular tremulousness common in the early stage of disease, in nearly 2,000 patients with poliomyelitis. The widespread inflammatory involvement of the central nervous system that occurs in poliomyelitis may be accompanied by many bizarre and unusual symptoms. The clinical picture in this female patient is briefly detailed, simply to illustrate the occurrence of severe unilateral ataxia and signs of cerebellar involvement in a patient who proceeded to have on the opposite side of the body eventual paralysis of the tibialis anterior, typical of the late residual of poliomyelitis. The occurrence of coincidental and classical severe poliomyelitis in her 16 year old son lends almost unmistakable evidence of the nature of the pathogen.

REFERENCES

1. Wickman, I.: Acute Poliomyelitis, Nervous and Mental Disease Monograph 16, New York, Nervous and Mental Disease Publishing Company, 1913.

2. Ford, F. R.: Diseases of the Nervous System in Infancy, Childhood, and Adolescence, ed. 3. Springfield, Ill., Charles C Thomas, 1952, p. 465.

Food and Education

The importance of food in planning a new school system has been recognized in Libya, where a nationwide program to provide school children with one nourishing meal each day is producing excellent results in better health and brighter pupils.

The program is a joint effort of the World Health Organization, the U.N. Food and Agriculture Organization, and the United Nations Children's Fund (UNICEF), collaborating with the Government of Libya. The U.N. Technical Assistance Board office in Libya has been instrumental in co-ordinating the Government's role and the services of international technical assistance in this program.

At present a daily supplemental meal, consisting of a cup of skimmed milk with sugar, 100 Gm. of dates, a small loaf of bread, and, every other day, a fish oil capsule, is being distributed to some 70,000 children in primary schools. The American CARE Organization is contributing supplies of cheese and butter to be added to this diet.

The federal, provincial, and local authorities of the Libyan Government have helped to organize the project so that it could reach even remote desert areas. Reports indicate that the number of children attending school has increased, and there has been a significant decline in the number of absences due to sickness. (UNESCO)

CASE REPORT

An Unusual Cause of Intussusception

REPORT OF A CASE

Christine E. Haycock, M.D.

INTUSSUSCEPTION AT THE ILEOCECAL VALVE IS the most common location of this occurrence and constitutes about 60 per cent of cases. It is thought to be due in part to the rapid and vigorous peristalsis occurring in this area, which is countered by antiperistalsis in the cecum. The majority of the cases occur in infancy (about 75 per cent), but it is not an unusual phenomenon in adults. The condition in adults is usually associated with a pedunculated lesion such as a polyp (which may be malignant), which protrudes into the lumen of the intestines. This type of lesion is carried along by the peristaltic rush and may carry the intestinal wall with it through the ileocecal valve.

The case to be presented represents what the author believes is a rare cause of such an ileocecal intussusception, and an interesting diagnostic problem.

CASE REPORT

A 64 year old white female, born in Italy, entered St. Barnabas Medical Center Jan. 23, 1957, with the chief compaint of sudden, severe, abdominal pain, accompanied by diarrhea of three days' duration.

The history of this patient revealed no serious illnesses or operations. She had a marked scoliosis of the spine for many years and some minimal osteoarthritis. Her dietary habits were typically Italian. Her husband and eight siblings were all living and well.

This patient was in apparent good health up to three days prior to admission to the hospital when she developed severe, generalized, cramping abdominal pain associated with some moderate diarrhea. There was no nausea, vomiting, or any evidence of blood in the loose stools. On the day prior to admission, the pain shifted to the right lower quadrant, and when the visiting physician examined her he noted a firm, round, palpable mass in that area. The mass seemed to be 5 to 7 cm. in diameter and freely movable. There were no nodes palpable in the inguinal region. The abdomen was soft and flat. There was no enlargement of the liver, spleen, or kidneys. Hospital admission was advised.

Upon admission to the hospital the findings were the same as described by the visiting physician, but the patient had no further pain or diarrhea. The remainder of the physical findings were all normal. Blood pressure was 95/60 mm. Hg. and her temperature was normal throughout her hospital stay.

Laboratory findings were as follows: erythrocyte count, 4.07 million per cubic millimeter; leukocyte count, 11,450 per cubic millimeter; hemoglobin, 12.8 Gm.; and a normal differential. Urinalysis was normal, and all subsequent blood counts were completely normal.

A flat film of the abdomen showed "a tremendously large, opaque, laminated calculus on the right side of the abdomen, presumably a gallstone, and associated with an enlarged gall bladder. Marked scoliosis of the spine and minimal osteoarthritis of the spine are present. The calculus measures about 1.5 inches in diameter and is found at the level of the iliac crest, and just below the surface of the liver, with the suggestion of an enlarged mass around it. No evidence of obstruction or ileus is seen" (Fig. 1A).

An excretory urogram (Fig. 1B) showed that the calculus had no connection with the normal-appearing genitourinary tract.

Dr. Haycock is Senior Resident, Department of Surgery, St. Barnabas Medical Center, Newark, N.J.

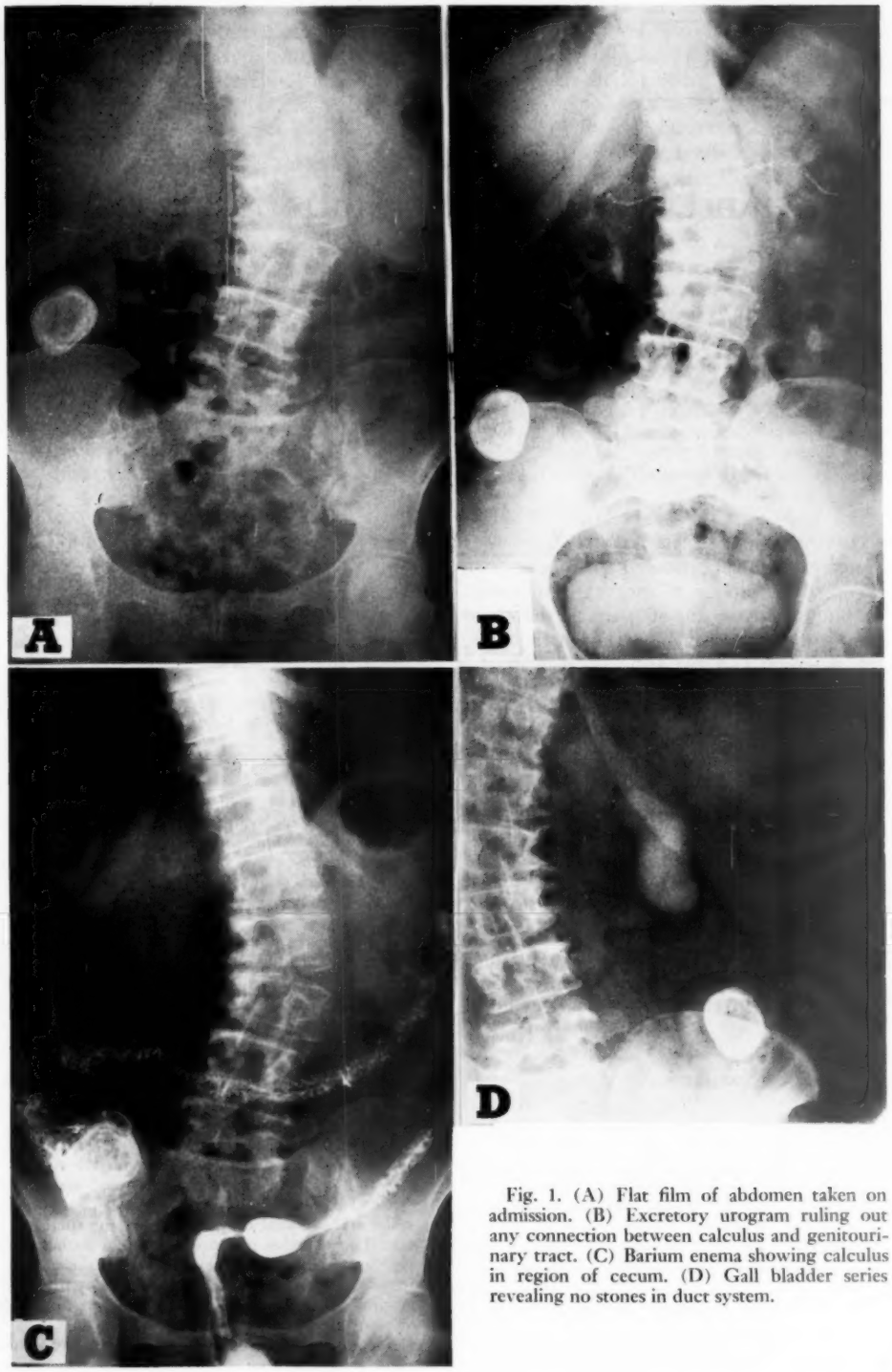


Fig. 1. (A) Flat film of abdomen taken on admission. (B) Excretory urogram ruling out any connection between calculus and genitourinary tract. (C) Barium enema showing calculus in region of cecum. (D) Gall bladder series revealing no stones in duct system.

Results of barium enema (Fig. 1C) were reported as follows: "On fluoroscopic examination the calculus appears to be lying immediately against and alongside of the cecum. The regular films seemed to bear this out and showed it to be in a fixed position relative to the cecum, being slightly posterior and medial to the cecum."

Finally, a gall bladder series (Fig. 1D) was reported as completely normal, the calculus being outside of the gall bladder.

In view of the findings, an exploratory laparotomy was carried out on Jan. 30, 1957. Examination showed the mass to be contained within the lumen of the cecum. A small opening in the middle taenia coli of the cecum was made and the interior of the cecum was examined. The calculus was found to be within a small portion of intussuscepted ileal mucosa just distal and superior to the ileocecal valve. There was a moderate amount of edema present in the area. The mucosa containing the calculus was easily lifted up and away from the wall of the cecum; it was clamped across and cut, and the mass was removed. The area, including the four layers of the intussuscepted area was repaired with a running lock suture. The opening in the cecum was closed in the usual two layer fashion and the abdomen was closed.

The patient had a completely uneventful postoperative course and was discharged as recovered on Feb. 9, 1957.

The pathological report of the specimen was as follows: "The specimen consists of what appears to be a section of intestinal mucosa measuring 6 cm. in length. Within the mucosa there is an oval mass measuring 7 cm. in diameter which on cut section shows a brownish, dry tissue resembling feces that is partially calcified. Sections through the ileocecal junction show edema and congestion of the mucosa, with considerable edema of the submucosa of the terminal ileum and a moderate degree of congestion. Within the wall there are some collections of lymphoid follicles and a portion of the mucosa is eroded. Sections through the mass found within the lumen of the colon reveal amorphous material with focal areas of calcific deposits. Conclusion: enterolith."

COMMENT

The Surgical Department concluded that the sequence of events in this case were as follows: A foreign body, such as a pit, lodged itself within the mucosal layer of the terminal ileum and here gathered layers of fecal materials around it, eventually becoming calcified and enlarged to its final size. At that point an unusually strong peristaltic wave carried it, along with its enclosing ileal mucosa, through the ileocecal valve, where it became trapped. This was the cause of the patient's pain. As the initial edema subsided, the pain disappeared, and any additional portion of the terminal ileum carried through the ileocecal valve receded.

Unfortunately the calculus was discarded before chemical analysis of the material could be carried out. A general search of the literature revealed no similar cases in which such a large enterolith led to an intussusception.

BIBLIOGRAPHY

1. Pathology, edited by W. A. Anderson, St. Louis, C. V. Mosby Company, 1948.

2. A Textbook of Surgery, ed. 5, edited by F. Christopher, Philadelphia, W. B. Saunders Company, 1950.

Tranquilizers

The United Nations Narcotics Commission has passed a resolution that, in effect, warns that tranquilizing drugs will bear watching by governments. At the present time they are not classed as dangerous or as addiction producing. These tranquilizers represent a revolutionary turn in the treatment of mental disorders. They have cut down admissions to mental hospitals and markedly reduced the number of violent cases in those institutions. These drugs are doing a very great amount of good, and the Commission does not know of any narcotics addict turning to a tranquilizer instead of to his regular drug. However, these drugs are, and should be, sold only by prescription and under medical supervision. Their use must be watched very carefully.

Medical Highlights

INFLUENZA-PNEUMONIA DEATHS

According to the U. S. Public Health Service, deaths from influenza and pneumonia are still increasing but at a lower rate than previously. The latest week of record shows 865 deaths from influenza and pneumonia in 108 cities, an increase of 11 per cent. Increase rates for preceding weeks, however, were 27 per cent, 26 per cent, and 47 per cent. The number of cases of influenza-like diseases continues to be high. For the week that ended on Nov. 2, the U.S. Public Health Service estimated new cases at 1,250,000 or more, Cases reported by health authorities and physicians increased in a few states and decreased in others, including Connecticut, Michigan, Wisconsin, Alabama, Mississippi, Wyoming, Arizona, and Texas. The armed forces also reported fewer new outbreaks.

BED REST IN PULMONARY TUBERCLOSIS

There has been some moderate relaxation in the strictness of the application of bed rest in the treatment of pulmonary tuberculosis since the advent of antituberculosis chemotherapy, but bed rest is generally considered as a basic requirement of therapy, reports the Sub-Committee on Bed Rest in Pulmonary Tuberculosis of the American College of Chest Physicians. This is true in spite of deliberate programs in some areas to de-emphasize the importance of bed rest for the purpose of investigation.

In discussions of the treatment of tuberculosis, the intense interest in methods of use of the various drugs has occupied the attention of the phthisiologist to such a degree that little has been said about the need of rest as a basic part of therapy. To the men in active practice of chest diseases, this need is generally understood and accepted, but, to the person who casually reviews the literature, it is easy to gain an erroneous impression regarding the over-all program of tuberculosis treatment. Since an increasing amount of tuberculosis is being cared for by those not specially trained in this disease, the lack of information regarding the whole treatment picture can lead to disastrous results. It is the feeling of this Committee that a strong statement should be made reaffirming the importance of bed rest and its proved value in the regimen of tuberculosis treatment and that this statement should receive the widest possible attention. It is believed that bed rest should be maintained until the lesion is stabilized, as indicated by bacteriological, roentgenographic, and clinical evidence.

The Committee also wishes to reaffirm the desirability of at least starting the patient's care under sanatorium conditions for the purpose of patient indoctrination, evaluation of the clinical problem, and initiation of the various therapies.

RABIES

Rabies, one of the most ancient of the diseases men contract from animals, is on the wane in urban areas but on the increase among wild animals, chiefly foxes and skunks.

On Sept. 12, the second day of a three day conference held in New York, Dr. Ernest S. Tierkel, U. S. Public Health Service Communicable Disease Center, Atlanta, Ga., monitored a session devoted to rabies and to improvements in methods of combating it. The conference, on Animal Disease and Human Health, was jointly sponsored by the Atlanta center and by the New York Academy of Sciences.

The total number of cases of rabies in 1946 was 10,872, Dr. Tierkel pointed out. In 1955. the number was 5,839. In the same period cases in human beings declined from 22 to 5. He attributed this decline to increased vaccination of dogs.

Rabies is invariably fatal, in animals and human beings, unless the patient is protected with effective inoculations. Pasteur, famous as the father of the germ theory of disease, produced the first rabies vaccine three quarters of a century ago. Serum of a new type, by which antibodies can be introduced into the body of a bite victim, when rabies is known or suspected in the attacking animal, is the most important new development.

All the vaccines, new and old alike, protect the patient by causing the body to produce antibodies against the rabies virus. This, however, is a slow process. In cases of severe bites, particularly about the head, it may be too slow.

The new, so-called hyperimmune, serum closes this gap, protecting the vaccinated patient while his own antibodies are accumulating.

Dr. Kenneth F. Burns, Fourth U. S. Army Medical Laboratory, Fort Sam Houston, Texas, reported a newly recognized wild animal source of the disease—bats. These flying mammals have been recognized as subject to, and carriers of, rabies only in the last few years. Today, 14 species of bats have been identified as infectable with the virus. Only 2 human patients are thought to have died as the result of bat bites. Neither has been unequivocally established as a true case. One was that of a young Texas scientist engaged in field collection of bats. He died in 1956, three days after diagnosing his own symptoms as those of rabies. He is thought to have been bitten in the course of his work. The other case involved a Texas housewife who died in 1951, before bats were known to be carriers. Later investigation established that she had died of rabies and that she had been severely bitten by a "sick" bat. Weeks later she developed symptoms and died.

MORTALITY FROM HEART DISEASE

Coronary heart disease, the commonest form of heart disease today, is least frequent among young married women, among persons living in the rural part of the Southern states, and among those who have had no history of premature death or occurrence of heart disease in the family.

A study of recorded mortality from heart disease by statisticians of the Metropolitan Life Insurance Company reveals variations according to age, sex, weight, race, marital status, geographic region, and other factors.

Up to age 45, the death rate from heart disease runs up to 6.6 times as high for white men as for white women. The ratio decreases progressively with advance in age, until, at ages 85 and over, the rates for the two sexes among white persons are about the same. Among nonwhites, the sex differences in the death rate are much smaller and do not vary much with age.

Heart disease death rates are significantly higher for the widowed, the single, and the divorced than for the married. It would appear, therefore, the statisticians point out, that the factors associated with married life—selectivity of marriage and the more favorable environment of the married—influence the level of mortality from the disease.

A number of studies have shown that people who are overweight are more likely to suffer fatal attacks of heart disease. When overweight is coupled with slight or moderate elevation of blood pressure, the chances of such an attack are greatly increased.

The heart disease death rate is lowest in the Southeast Central region and highest in the Middle Atlantic region.

"Statistical findings strongly suggest that hereditary factors have a considerable influence on the level of mortality from heart disease," the statisticians conclude. "A recent investigation of insured lives showed that persons who on their application for life insurance had reported 2 or more cases of cardiovascular-renal disease in family members under age 60 were themselves subject to death rates from cardiovascular disease which were from one and three-fourths to two and one-half times those prevailing in standard risks."

President's Message

THE VIRTUES OF FEAR AND THE EVILS OF PEACE

This paradoxical title seems at first glance to be most unsuitable for a December message, when so many people listen for angelic voices to say again: "Fear not: for, behold, I bring you good tidings of great joy . . . and on earth peace, good will toward men."

In reality, instead of angelic voices we hear from every mode of communication such a volume of warning concerning the dangers of anxiety and the desirability of tranquility that our thinking easily can get out of focus. True values may be obscured in the discord of overtones.

Fear, hostility, and love are part of the emotional equipment of every human being. Without fear, one could not survive. We are born with the fear of falling and of loud noises. By experience and the teaching of our elders we learn to fear and thus avoid a multitude of dangers. A degree of fear can mobilize physical and mental forces for spectacular feats of accomplishment. Many of life's thrills and adventures stem from pitting courage against fear and fear can motivate us to apply brakes when we are overly bold and to overcome inertia when protective action is required. Let us keep fear as a faithful servant rather than a tyrannical master.

The Prince of Peace, whose birth is celebrated this month, was not a submissive, compliant individual but one whose ideas and actions were so revolutionary that the leaders of the religion of which He was an exponent condemned Him to death. His ministry was marked by hostility toward evil practices and tempered by a deep concern for the spiritual welfare of every man. His was an aggressive peace that came from doing a difficult job in the face of great obstacles and misunderstanding and His love was such that he forgave his enemies even as He was their suffering victim.

It is an evil and destructive peace that we hope to gain when we defy the laws of personal hygiene, ignore the demands of self-respect, escape from a duty within the scope of our ability, and see injustice and suffering that could be reduced by some effort on our part. It is a selfish illusion of peace, for which the ostrich is famous, that permits inertia when the welfare of self or others requires some action. Peace is a deceptive evil when it is secured by: silence when a protest should be made; conformity to avoid criticism or conflict at the expense of integrity; inertia when action is required; daydreams to replace reality; "It can't be done, why try"; and the "let John do it" attitude.

When fear produces appropriate action and the thrill of adventure, and when hostility, disciplined by love, is translated into aggression against evil practices (not against people or peoples), the adverse effect of fear is avoided and the true values of peace are experienced. May the fear of God and the joys of His Peace be with you this Christmas season.

Elizabeth S. Kahler

Portraits Honor Medical Women

Bess Furman

AN OIL PORTRAIT THAT NARROWLY ESCAPED being scrapped is the most prized item in an exhibit . . . called "Women and Medicine."

The small painting is of Dr. Mary E. Walker, pioneer woman physician and feminist who always dressed in male attire. The theory of the historian in charge of the exhibit, on which he is still doing research, is that the portrait depicts Dr. Walker's role as a Civil War spy.

National Library of Medicine photo, Washington, D.C.

MARY E. WALKER, M.D.
(1832-1919)

The exhibit is in the old Army Medical Museum, founded in 1862. It will be open to the public . . . and the first tour will be

taken by women guests of the 1957 convention of the Association of Military Surgeons of the United States. The museum is now titled the Medical Museum of the Armed Forces Institute of Pathology.

TRACED TO EGYPTIAN

The display goes back to a facsimile of the most ancient known pictorial record of a woman doctor, an Egyptian stele of about 3000 B.C. The legend informs that her small boy patient had poliomyelitis and was cured by her intercession with the goddess Isis.

However, emphasis is strong on the Civil War era, when three great women joined the Army—Dr. Mary E. Walker; Clara Barton, founder of the Red Cross; and Dorothea Lynde Dix, founder of St. Elizabeth's Hospital . . . and of a long list of state mental hospitals.

As far as anyone knows, the portrait of Dr. Mary E. Walker may have been hanging around the medical museum from the early years of the collection. Robert W. Davis, who is writing a history of the museum in preparation for its 100th anniversary celebration, said he had traced the portrait by records back to 1888, when the museum moved into the old building on the mall now occupied by the Army Medical Library.

However, when the museum was moved across Constitution Avenue to a temporary building of World War II, someone threw the painting in a waste basket. A woman official rescued it, and kept it in her office. Mr. Davis found it there when he came along to write the history.

NOT KNOWN IF ORIGINAL

He said he had not yet been able to learn whether the painting was an original or a copy. Nor has he found out anything about "J. B. Hudson," the artist's signature on the back. He thinks the date 1859 found there quite likely was somebody's wrong guess later. Otherwise why the Civil War dispatch case, he asks.

Dr. Mary E. Walker, born in Oswego, N.Y., in 1832, was graduated from the Syracuse Medical College in 1855. According to the Dictionary of American Biography, she served as a nurse in the Union Army for the first three years of the Civil War, and "between March and August, 1864, appears to have served as a spy."

Congress conferred on her a bronze medal for going through Confederate lines to care for the ill. A 1917 review board took it away on a technicality.

Dr. Walker rose to an honored position in the nation's capital. She was often seen at White House receptions in formal gentlemen's attire, from the eighteen hundred and seventies on through the Theodore Roosevelt Administration.

DIED IN FALL IN 1917

"A fall on the Capitol steps in 1917 was the indirect cause of her death near Oswego two years later," the biographical dictionary states. Dr. Walker, at age 85, presumably was there protesting the belated action of the Board of Medical Awards in taking her medal away.

The exhibit lists 50 notable women in medicine the world over. It lists notable medical discoveries made by women, and it pays tribute to the contribution of the midwife and the nurse . . . .

(Reprinted with special permission from *The New York Times*, Oct. 27.)

Medical Women of the Year

FRANCES BARTLETT-TYSON, M.D., was selected by Branch Four, New Jersey, as the 1957 Medical Woman of the Year and was honored by the AMWA on Nov. 15 during the Midyear Meeting in Dallas, Texas.

The 83 years of Dr. Tyson's life have brought varied experiences in medicine and in community activities. It would be difficult to decide to which field she has made her greatest contribution. In many instances the work overlapped and both medicine and the community profited by her devotion.

Dr. Tyson is a native of New Jersey, born in Vineland on Dec. 26, 1874. Her ancestors established the pattern to be followed by Dr. Tyson. One forebear, Dr. Josiah Bartlett, was one of the five physicians who signed the Declaration of Independence and who later organized the first state medical society (New Hampshire).

After graduation from the Philadelphia College of Pharmacy, Frances Bartlett entered Woman's Medical College of Pennsylvania. The 18 months following her graduation were spent as an intern at Blockley Hospital, now the Philadelphia General. Internships in this hospital had been denied to women for many years. Dr. Tyson's qualities removed this barrier to others of her sex.

Dr. Bartlett did general practice in West Philadelphia and soon was appointed Chief of the Gynecology Clinic of Woman's Hospital in her community. After her marriage in 1909 to William Tyson she retired from practice on request of her husband.

When she moved to Leonia, N.J., in 1913, Dr. Tyson discovered an outlet for her scientific training in voluntary work with the American Red Cross. She organized a Red Cross workroom and gave classes in first aid and classes for expectant mothers. She served as an elected member of the Board of Directors of the Northern Valley Chapter.

When World War I drained the community of doctors, a delegation of townspeople prevailed upon Dr. Tyson to return to active practice. Leonia, like other communities, was stricken with the "flu" epidemic in 1918. Through her knowledge of organizations gained during the years of her voluntary service, Dr. Tyson prevailed upon the members of the Women's Club to provide food and nursing care to the needy in their homes when the hospitals and other emergency treatment centers could not care for them. Dr. Tyson did not escape having influenza, but continued to make calls after she became ill; her right ear was affected, which resulted in permanent deafness of that ear.

Dr. Tyson was soon known to everyone in the community and in many instances was the family doctor. In addition to her active private practice, she became the first school physician and town health officer, neither office having existed previously. Accepting criticism for giving toxoid treatments for diphtheria, Dr. Tyson was effective in eliminating this disease in her community. Dr. Tyson was influential in obtaining a school nurse and establishing the health council system.

Children have always been of great interest to Dr. Tyson and much of her time has been devoted to their guidance. She founded the Leonia Youth Museum and endowed it with $25,000 and a building fund. She initiated the Girl Scout program in Leonia.

Many honors have been bestowed on Dr. Tyson. She was the recipient of The Daughters of the American Revolution distinguished service award. Her portrait, life-size, presented by the townspeople, hangs in the Girl Scout building; a hand-illuminated parchment and scroll was presented to her by the community in recognition of her civic achievements; The American Freedom Foundation presented to the Leonia schools in her honor a flag, a wall plaque, and a shelf of books on American history and freedom. She has received the Cecelia Gaines Holland award of the General Federation of Women's Clubs; was presented with the AMA Golden Merit award for 50 years of distinguished medical service; and was honored at a dinner of the New Jersey Branch of the AMWA, being presented with a plaque designating her the Branch Four Medical Woman of the Year.

Dr. Sylvia Becker, President of Branch Four, said: "She is greatly beloved in her community—for her skill as a physician, for her kindness, for her understanding, and for her devotion to her community."

Dr. Tyson remains in semiactive practice, seeing some of her patients whom she has taken care of over the years.

She is affiliated with the Philadelphia, Bergen County, and New Jersey medical societies; the AMA; the New Jersey Health Officers Association; the Public Health and Sanitation Association; the American School Health Association; the AMWA (Branch Four and national); and the MWIA.

MADELAINE RAY BROWN, M.D., has been selected Medical Woman of the Year by Branch Thirty-Nine, Boston. She was honored by the AMWA at a luncheon on Nov. 15 during the Midyear Meeting of the Association in Dallas, Texas.

Dr. Brown was born and reared in Providence, R.I. She received her A.B. degree from Bryn Mawr and her M.D. degree from Johns Hopkins School of Medicine in 1927. She did graduate work at Queen Square Hospital for Neurological Diseases in London, England; at the Rhode Island Hospital for the Mentally Deficient; and at Bellevue Hospital in New York City. She was a Fellow in Neuropathology and an Associate in Research, Neurological Unit, Boston City Hospital.

Dr. Brown is a member of the American Neurological Association and the American College of Physicians. She has served the Boston Society of Psychiatry and Neurology as Secretary and Treasurer for five years and was President for one year. She has given outstanding medical service in clinical research and as a neurologist at Massachusetts General Hospital, and as an instructor in neurology at Harvard Medical School. She is at present Consulting Physician at the New England Hospital for Women and Assistant in Neurology at the Massachusetts General Hospital. She has published more than 30 papers since 1932.

Outdoor sports, camping, and traveling were among Dr. Brown's activities in previous years. In 1930 she was given a definite diagnosis of multiple sclerosis. She has lost sight of her left eye and in 1954 was confined to a wheel chair. In regard to this, Dr. Esther Silveus, President of Branch Thirty-Nine, said: "This has not interfered with her work. It is her ambition to continue with her teaching of Harvard students and with her work at the Massachusetts General Hospital."

Today, Dr. Brown's interests include television, on which she watches especially particular baseball games; her distinguished collection of Rhode Island pewter; her large library of old medical books; and reading. She prefers "solid" reading to fiction and particularly likes biographies. Her apartment overlooks the Charles River and the Boston skyline, which affords her much pleasure.

In 1954 Dr. Brown received the Elizabeth Blackwell award of the New York Infirmary for her work in neurology.

CLARA G. COOK, M.D., has been selected by The Alamo Branch, San Antonio, Texas, as the 1957 Medical Woman of the Year and was honored by the AMWA at a luncheon on Nov. 15 during the Midyear Meeting in Dallas, Texas.

Dr. Cook graduated from the University of Texas in 1914 and interned at Women and Children's Memorial Hospital in Worcester, Mass. She returned to San Antonio and entered general practice.

Dr. Cook has been outstanding in community and church work, as well as in medical practice in San Antonio, and as a pediatrician with the American Red Cross in France during World War I.

She has been active in many civic organizations. She is a charter member and President of the San Antonio Overseas Service League; a charter member of the San Antonio Zonta International, on whose board she has served; a board member and Vice-President of the Business and Professional Women's Club; and a board member of the Aldersgate Methodist Church for 20 years.

Her medical service includes: physician since 1919 at the Protestant Children's Home; physician for 20 years at the Wesley House Community Sick Clinic; member of the pediatric staff of Robert B. Green City-County Hospital for 15 years; and Assistant City Physician for two years.

Dr. Cook is a member of the AMA, Texas Medical Association, Bexar County Medical Society, the AMWA (Branch Forty-Three and national), and the MWIA. She is on the staff of Baptist Memorial and Santa Rosa hospitals.

MARY MARGARET FRAZER, M.D., was selected by the Blackwell Branch, Detroit, as the 1957 Medical Woman of the Year. She was honored by the AMWA at a luncheon on Nov. 15 during the Midyear Meeting in Dallas, Texas.

Dr. Frazer received her A.B. degree from Wayne State University and her M.D. degree from the Wayne State University College of Medicine. She also holds an M.S. degree in endocrinology from the University of Detroit. Her internship was served at Grace Hospital. Later, she did postgraduate study at Wayne University and the University of Michigan.

Dr. Frazer has an outstanding record of civic service. She has served on the Cancer Committee of Wayne County Medical Society; as Medical Director of the Women's Cancer Detection Center; as the American delegate to the MWIA Meeting in Amsterdam, Holland, in 1947; as American delegate to the Pan-American Medical Women's Alliance at Mexico City in 1947; and as American Councilor of Wom-

en's Alliance from 1947 through 1949. She was appointed by the Governor of Michigan to serve on the State Council of Defense for Wayne County during World War I; she served as a field worker in zones 3 and 5 during the Korean War; and taught Red Cross classes in Detroit. She is a past president of the alumnae of the University of Detroit and speaker for the Board of Health and the Wayne County Medical Society.

Her civic recognitions are many. She was selected Leading Woman of the Year of the Soroptimist Club in 1945; First Woman of the Year by the University of Detroit; Woman of the Year by a Protestant, Jewish, and Catholic group; and Outstanding Indian Villager of 1949 by the Indian Village Association.

Dr. Frazer is a member of the Michigan State and Wayne County medical societies; the AMA; the MWIA; the Association for the Study of Internal Secretion; the honorary medical fraternity in pathology; the Nu Sigma Phi; national medical sorority; Pi Alpha Kappa; and the Pan-American Medical Women's Alliance. She is a member of the AMWA and at present is a member of the Executive Committee. Previously she has served the Association in many capacities.

She is a member of the Grace Hospital staff and on the courtesy staff of the Mount Carmel Hospital.

Mary J. Kazmierczak, M.D., was selected by Branch Eighteen, New York State, as the 1957 Medical Woman of the Year and was honored at a luncheon by the AMWA on Nov. 15 during the Midyear Meeting in Dallas, Texas.

Dr. Marguerite McCarthy-Brough, Chairman of the committee that selects The Medical Woman of the Year for the New York State Branch, said of Dr. Kazmierczak: "She is beloved among women physicians of the state; she is modest, sincere, loyal, and always willing to help women physicians. She was notified in the spring of their selection but felt unworthy of the award."

Dr. Kazmierczak was graduated from the University of Buffalo School of Medicine in 1921 and interned at Buffalo Children's Hospital. Her general practice has been devoted largely to children.

From 1919 through 1943 she served child health clinics for the Buffalo Department of Health; from 1920 through 1934 she headed the medical staff of the German Roman Catholic Orphanage, which cares for 550 children, and in 1920, at this orphanage, began the first inoculations against diphtheria; and in 1939 she helped establish St. Rita's Home for Exceptional Children, the institution that gained recognition through the book "My Son's Story." Dr. Kazmierczak continued her civic work as a member of the City Planning Commission from 1942 through 1947, serving as Secretary for two years; as a member of the Buffalo Board of Education from 1947 through 1957; and as President of the Board in 1949-1950 and 1954-1955. These years of public service were recognized on Dec. 12, 1953, when she was cited by the University of Buffalo at a convocation: "... in recognition of outstanding ability and distinguished accomplishments in the field of civic affairs."

Dr. Kazmierczak has served the AMWA as Chairman of the Scholarship Committee, and The Women's Medical Society of the State of New York as President in 1932-1933. She is also a member of the Academy of Medicine, the AMA, and the Medical Society of the State of New York. She was a delegate to the state conventions in 1929 and 1931 and served as Secretary of the Medical Society of the County of Erie for three years. She joined the Women Physicians League of Buffalo in 1920 and is a past president of the League.

GRACE M. SAWYER, M.D., was chosen by Branch Nineteen, Iowa, as the 1957 Medical Woman of the Year, and was honored by the AMWA on Nov. 15 during the Midyear Meeting of the Association in Dallas, Texas.

Dr. Sawyer, a native of Iowa, was born and grew up on a farm in Adair County. She taught in rural schools for two years before entering the Chicago College of Medicine and Surgery. She interned at Allentown, Pa., in general medicine and at Binghampton (N.Y.) State Hospital in psychiatric work. After five years of private practice in Iowa and Wyoming Dr. Sawyer joined the medical staff of the state hospital and school at Woodward, Iowa, and from 1923 to 1939, except for a three year interruption, served as ward physician. She then was appointed Assistant Superintendent, the first person to serve in this capacity, and in 1951 was named Acting Superintendent. This was a trial venture for the hospital. Women superintendents were an untried and dubious element. Dr. Sawyer demonstrated her ability, and in slightly more than one year was appointed Superintendent.

The institution was originally established for the care of epileptics, but, as the demand for care of the mentally deficient increased, the hospital facilities were expanded to accommodate patients from one half of the counties in the state. The hospital now accommodates approximately four times the number of patients cared for in the early years of Dr. Sawyer's service.

Dr. Sawyer is a member of the county and state medical societies, the AMA, the American Association for Mental Deficiency, the American Psychiatric Association, and the Iowa Neuro-psychiatric Society. She is a life member of the AMWA, serving at present as the Director of the Northwest Central Region. She is a past president of the Iowa State Medical Women's Society—Branch Nineteen of the AMWA.

Scholastic Awards—1957

FIRST PLACE

The AMWA is proud to present the four women medical students who graduated in first place and the 28 women students who graduated in the upper 10 per cent of their classes in 1957.

MARCIA KEPLER BILBAO, M.D., graduated first in the 1957 class of the College of Physicians and Surgeons, Columbia University. She was 1 of 15 women in a class of 114.

Dr. Bilbao was born in Rochester, Minn. Her father, mother, Helen Mackeen Kepler, and grandmother, Ida Adams Mackeen, were all doctors. She was brought up in the best medical traditions. She is married to a schoolmate, Dr. Joseph Bilbao, who was graduated in 1955. Dr. Bilbao received her B.S. degree from the University of Minnesota in 1952, graduating with high honors. Her mother and grandmother received their M.D. degree from Minnesota.

Dean Alva E. Severinghaus said of Dr. Bilbao: "She does everything well, has a large background of information, and knows how to use it. She is well organized, intelligent, sensible, and effective. She is a pleasant, attractive girl with a good sense of humor. I've seen few better in my time at Physicians and Surgeons."

Dr. Bilbao intended to become an occupational therapist. During her senior year at Rochester Junior College she went to New York on her first hospital assignment. While in New York she met her future husband, a medical student, who encouraged her to go into medicine. She began her premedical studies in Minnesota that year. The following year she returned to New York, working as an occupational therapist at Presbyterian Hospital and attending night school at Columbia University. She enrolled as a medical student at Columbia College of Physicians and Surgeons the following year. Dr. Bilbao says: "The four years were stimulating and happy. In the first two years I took an active interest in the school's extracurricular activities, but in the last two years the demands of my marriage and part-time jobs were too great."

Dr. Bilbao is especially interested in music and is an accomplished pianist. She is interested in occupational therapy and has a working knowledge of and ability with crafts.

Dr. Bilbao is interning at Roosevelt Hospital in New York City and intends to specialize in radiology.

MARGUERITE GOETKE DEUTCH, M.D., graduated with highest rank in a class of 40 from Woman's Medical College of Pennsylvania.

Dr. Deutch was born in Jamaica, N.Y. She received her A.B. degree in 1953 from Cornell University, which she attended on a New York State scholarship. Before entering medical school Miss Goetke was a dental assistant and laboratory technician and worked in a pathology laboratory (Papanicolaou technique) and in the Biophysics Department of the Laboratory of Nuclear Studies at Cornell University.

She is married to Bernhard Deutch, who is working for his Ph.D. in physics at the University of Pennsylvania. Her favorite hobby is music.

Dr. Deutch attained the highest cumulative

average for the first and second years and the highest average for all four years.

A member of Alpha Omega Alpha, she is interning at Graduate Hospital of the University of Pennsylvania.

ANNA LOUISE ELLINGTON, M.D., the only woman in a class of 53, ranked first in her class at Meharry Medical College in Nashville, Tenn.

Dr. Ellington was born on July 4, 1932, in Birmingham, Ala. She attended Fisk University (1948-1949), Western University (summer of 1952), and received her A.B. degree in music from Oberlin College in 1953, where she also fulfilled the premedical requirements.

In 1948 she was the recipient of a cup from the Exchange Club of Birmingham and of a gold medal from the Alabama State Teacher's College, both awards being presented for scholastic achievement. She was chosen Pepsi-Cola scholar and Gorgas science scholar in 1948. In 1955 she won the Pfeiffer scholarship.

Dr. Ellington is a member of Delta Sigma Theta Sorority, Alpha Omega Alpha, honorary medical society, and Kappa Pi, national honorary society.

Her hobbies are music, with the piano as her first choice of instruments, cooking, and tennis.

Dr. Ellington is serving her internship at Detroit Receiving Hospital.

BEATRICE KAPLAN, M.D., graduated in first place from the State University of New York College of Medicine in Brooklyn. Dr. Kaplan was 1 of 4 women in a class of 145 students.

Dr. Kaplan graduated from Washington Square College of New York University, where she had an excellent scholastic record. She is a member of Phi Beta Kappa and Vice-President of Aesclepiad, the women's honorary premedical society at New York University. She was the winner of the New York State Regents Scholarship for the Professional Study of Medicine. She is Secretary of the local chapter of Alpha Omega Alpha, honorary medical society.

Assistant Dean James O. Pinkston said of Dr. Kaplan: "Miss Kaplan's record in medical school has been outstanding. Furthermore, she achieved very high grades on the National Board, Part I Examinations."

Typical comments from her basic science teachers were: "Phenomenal student with in-

terest and drive. Helps other students and gets along very well with her fellow students. Pleasant personality"; "Very good student. Work consistently excellent. To be given very high recommendation"; "Excellent and brilliant student, great organizer, and good leader. An unusually capable student. Excellent in laboratory work." Comments from teachers of clinical studies were: "Exceptional, outstanding student"; "Very well informed, has initiative, is eager and mature"; "A very outstanding student."

Dr. Kaplan's hobbies are dramatics and feature writing.

She is interning at the Bronx Municipal Hospital Center in New York.

HONORABLE MENTION

ANITA COYNE ADAMS, M.D., 1 of 2 women in a class of 74, graduated in sixth place from Emory University School of Medicine and is interning at Emory University Hospital.

Dr. Adams was born in Atlanta, Ga., graduated from North Fulton High School, and received her A.B. degree from Agnes Scott College with high honors in 1952, in which year she married Dr. Carsbie C. Adams. She majored in Greek and Latin and did honors work in Roman satire. She completed the premedical requirements at Emory University in 1952-1953, and received her M.D. degree in 1957.

She is a member of Phi Beta Kappa and Alpha Omega Alpha. Her hobbies are reading, especially Greek and Latin classical literature, and horseback riding.

Dr. Evangeline T. Papageorge, Assistant Dean, said: "I have been pleased to note that for the last three years we have had at least one outstanding woman in each graduating class. In June, 1955, Dr. Pat Barrow ranked fifth among 69 students; in June, 1956, Dr. Barbara Stephenson ranked eighth among 73 students; this year Dr. Anita Coyne Adams ranked sixth among 74 students. When one considers that we seldom have more than two, and sometimes not that many, women in our graduating classes, I think we have reason to be proud of our outstanding women students."

NANCY THOMS BLOCK, M.D., graduated in fourth place in a class of 185 at the University of Michigan Medical School.

OLGA IGUINA BRAVO, M.D., was graduated in second place from the University of Puerto Rico. She was 1 of 7 women in a class of 41.

Dr. Bravo was born in Arecibo, was graduated from the Arecibo High School, and received her B.S. degree in 1952 and Certificate of Medical Technology in 1953 from the University of Puerto Rico.

She is married and the mother of 7 year old Astrid. Dr. Bravo is interested in pediatrics and is interning at the Arecibo District Hospital. Her hobbies are music and cooking.

PATRICIA CONNAMACHER CHARACHE, M.D., graduated in the upper 10 per cent of her class of 129, 9 of whom were women, at New York University College of Medicine.

Dr. Charache was born in Newark, N.J., the daughter of Dr. Carye-Belle Henle, a former officer of the AMWA, and the late Dr. Harold Connamacher. Dr. Charache received her early education in Maplewood, N.J. She attended Oberlin College in Ohio, transferring, after her marriage to Samuel Charache in her junior year, to Hunter College, New York City, from which she received her A.B. degree in 1952. Before admission to the New York University College of Medicine she worked for one year, primarily in the Laboratory of Pupillography at Columbia University College of Physicians and Surgeons.

Her special interests and hobbies are scientific investigation, literature, painting, and outdoor activities.

Dr. Charache is interning at the Baltimore City Hospital.

MARY ELLEN EDMONDS, M.D., ranked fourth

in the graduating class of 40 at Woman's Medical College.

Dr. Edmonds, born in Gainesville, Mo., was graduated from Tucson Senior High School in Arizona and received her B.S. degree from the University of Arizona. Her hobby is music.

She is serving her internship at Philadelphia General Hospital.

BARBARA MAE EVANS, M.D., received her M.D. degree from the University of Southern California School of Medicine. She was graduated in seventh place, and was 1 of 2 women in a class of 67.

Dr. Evans received her A.B. degree at Occidental College, Los Angeles, in 1952. It was necessary for her to find employment during the summer months in order to finance her medical education.

Her internship is at Wadsworth Veterans Administration Hospital in Los Angeles.

ELEANOR OLSEN FOSTER, M.D., ranked fourth in a class of 98, of whom 7 were women, graduating from the College of Medical Evangelists, Los Angeles. She is serving an internship at the Los Angeles County General Hospital.

At La Sierra College, Arlington, Calif., she majored in chemistry and minored in religion, receiving a B.A. degree in 1953.

Dr. Foster was reared in the medical tradition. Her father is Dr. Clarence W. Olsen, Clinical Professor of Neurology at the College of Medical Evangelists. She was married to a classmate, Glenn L. Foster, in 1953. Her hobbies are music and sewing.

LUCY VAUGHN RAWLINGS FREEDY, M.D., 1 of 3 women in a class of 78, graduated in second place from Duke University School of Medicine.

Dr. Freedy was born in Roanoke Rapids, and received her early education in North Carolina. She attended Wingate Junior College and received her B.S. degree at Wake Forest. She also studied at the University of Southern California.

Dr. Freedy is interning at the Ohio State University Hospital in Columbus, Ohio. Her hobby is music.

MARY ANNA FRIEDERICH, M.D., 1 of 5 women in a class of 65, was graduated in third place from the School of Medicine and Dentistry, the University of Rochester, New York.

She grew up in Rochester, attended its public schools, and was graduated from Monroe High School. After attending St. Lawrence University in Canton, N.Y., for one year, Dr. Friedrich transferred to Cornell University from which she was graduated as a mathematics major in 1953. She was active in Chi Omega and is a member of Alpha Epsilon Delta and Pi Mu Epsilon, national mathematics honor society; she was elected to Alpha Omega Alpha during her fourth year at Rochester.

"The chance to fulfill my lifelong ambition was granted when I was accepted at the University of Rochester School of Medicine. My four years at Rochester were very enjoyable ones. The longer I spend in medicine the more I like it and realize what a great responsibility we all have to contribute to our society."

Dr. Friedrich is interning at Strong Memorial Hospital of the University of Rochester, spending six months in surgery and six months in obstetrics and gynecology. She will specialize in obstetrics and gynecology.

JUNE HADLEY GOLDFARB, M.D., ranked second in a class of 53, 2 of whom were women, graduating from the Vanderbilt University School of Medicine.

Dr. Goldfarb was born in Jackson, Tenn., attended Milan Elementary School in Milan, and was graduated from the West End High School in Nashville. She received her B.A. degree at Vanderbilt University in 1954. She is a member of Phi Beta Kappa and served as Secretary-Treasurer of Alpha Omega Alpha.

Her hobbies are oil painting and fancy needlework.

Dr. John B. Youmans, Dean, stated: "We are happy to recommend Mrs. June Hadley Goldfarb for the Honorable Mention Citation of the AMWA."

She is serving her internship at Vanderbilt University Hospital Medical Service in Nashville, Tenn.

DOROTHEA WAELDER HELLMAN, M.D. was graduated *magna cum laude* from Harvard Medical School. There were 7 women in a class of 145. She received her A.B. degree from Radcliffe College in 1953 and is a member of Phi Beta Kappa. She is serving her internship at Beth Israel Hospital in Boston.

Left to right *(Top):* Anita Coyne Adams, M.D., Lucy Vaughn Rawlings Freedy, M.D., Mary Ann Friederich, M.D., and Margaret Jane Hoekstra, M.D. *(Center Left):* Olga Iguina Bravo, M.D. *(Center Top):* Barbara Mae Evans, M.D. *(Center Bottom):* Lenke Houbalek, M.D. *(Center Right):* Eleanor Olsen Foster. *(Bottom):* Mary Ellen Edmonds, M.D., Patricia Connamacher Charache, M.D., June Hadley Goldfarb, M.D., and Rochelle Hirschhorn, M.D.

ROCHELLE HIRSCHHORN, M.D., graduated in the upper 10 per cent of the 1957 class of New York University College of Medicine. Dr. Charache and Dr. Hirschhorn were 2 of 9 women in the class.

Dr. Hirschhorn was born in Brooklyn, N.Y., where she attended public and high school. In 1949 she entered Barnard College on state and Barnard scholarships, receiving her B.A. degree in 1953. During her senior year she married a fellow student, Kurt Hirschhorn.

Dr. Hirschhorn has been studying endocrinology in Uppsala, Sweden. She will return after nine months and intern at the Fourth Division of Bellevue Hospital in New York City. Her special interests and hobbies are music, both playing and listening to it, and literature.

MARGARET JANE HOEKSTRA, M.D., graduated from the University of Wisconsin Medical School as 1 of 2 women in a class of 78. Dr. Hoekstra ranked in eighth place.

Dr. Hoekstra graduated from high school in Marshfield, Wis., and received her premedical training at the University of Wisconsin, from which she was graduated with a B.S. degree.

Dean John Z. Bowers said: "Miss Hoekstra has been one of our outstanding students. She has carried out a research program on leukemia in the Department of Physiological Chemistry along with her medical school courses. She accepts responsibility well and has shown herself to be an imaginative and careful laboratory worker. She intends to prepare herself for a practice in pediatrics and I believe she will do well in her chosen field."

Dr. Hoekstra is a member of Sigma Sigma, Wisconsin honorary scholastic medical organization, Alpha Omega Alpha, Phi Beta Kappa, and Sigma Epsilon Sigma. In addition to these scholastic achievements, she is a member of Phi Kappa Phi sorority and Alpha Epsilon Iota, a medical fraternity of women.

Her hobbies are painting, art, and the study of mythology.

Dr. Hoekstra is serving her internship at Grace-New Haven Community Hospital, New Haven, Conn.

LENKE HOUBALEK, M.D., ranked in the upper 10 per cent of the 1957 graduating class at State University of New York College of Medicine in Brooklyn. There were 4 women in the class of 145.

Dr. Houbalek, born in Austria in 1932, is a resident of New York City. She received her B.S. degree from Waynesburg College, Pennsylvania, where she was a member of the French Club and the Glee Club. She was the recipient of a Presbyterian Church Scholarship for Undergraduate Study.

Dean James O. Pinkston said: "Miss Houbalek possesses a very pleasant, congenial personality and is well liked by her teachers and classmates."

She spent her summer vacation periods as a camp counselor and as a laboratory technician at a Brooklyn hospital and assisted a general practitioner in his work. Dr. Houbalek married a classmate, Joseph E. Velasco, in June, 1957.

She is serving her internship at the Brooklyn Hospital.

CHERIE L. B. HOWRY, M.D., was graduated from the University of Washington School of Medicine in the upper 10 per cent of her class and is serving her internship in the King County Hospital System, Seattle.

A native of South Dakota, Dr. Howry received a B.S. degree in chemistry from the University of Washington in 1953.

"An unusual scholar throughout the four years of her medical training," said Dr. Richard J. Blandau, Assistant Dean of the Medical School, "she has been one of the most outstanding women medical students we have had in some time." Throughout her university work she continued in the upper 10 per cent of her class.

Dr. Howry received a number of scholarships and research fellowships, including the Julia H. Lane Student Summer Research Fellowship, which is given only to exceptional students. She worked on the problem "Renal Function in Toxemia of Pregnancy" in the Department of Obstetrics and Gynecology and has written a thesis on the subject.

She is a member of Pi Beta Phi and of Alpha Epsilon Delta.

Dr. Howry is the wife of Rex R. Howry, a civil engineer.

F. GERTRUDE HURLEY, M.D., was graduated

Left to right *(Top):* Marjorie Merritt Mengedoht, M.D., Hilda Scheffler, M.D., Lillian Hoffman Lockhart, M.D., and Dorothy Alyene Reese, M.D. *(Center):* Nina Bencich Woodside, M.D., Randi V. Rosvoll, M.D., and Virginia E. Young, M.D. *(Bottom):* Cherie L. B. Howry, M.D., Helen Claire Oels, M.D., Lila Stein Kroser, M.D., and Judith Graham Jewel, M.D.

cum laude from Stritch School of Medicine, Loyola University, Chicago. One of 3 women in a class of 78, she ranked in fifth place. She received the B.A. degree, *cum laude*, from Hofstra College in 1949.

Dr. Thomas P. Galarneault, Assistant Dean, said of Dr. Hurley: "During the time of her attendance here, Miss Hurley was an exemplary student—prompt, courteous, well dressed, and friendly as well as studious. She maintained a 90 per cent average."

Dr. Hurley is interning at Meadow Brook Hospital, Hempstead, N.Y.

JUDITH GRAHAM JEWEL, M.D., graduated in second place in a class of 97, 2 of whom were women, from the State University of Iowa College of Medicine.

Dr. Jewel, in private life Mrs. Philip Davis Jewel, was born in Des Moines and received her B.A. degree from the University of Colorado at Boulder, where she was elected to Phi Beta Kappa and Mortar Board. Dr. Jewel was co-winner of the Prentiss Memorial prize for her record in gross anatomy in 1953-1954, and the recipient of the Fisher scholarship (tuition and books) in 1954-1955. She was elected to Alpha Omega Alpha in 1956. Dr. Jewel was a member of the "Quiz Kids" radio program from 1945 through 1948. Her hobby is reading.

She is interning at the State University of Iowa Hospital, Iowa City.

LILA STEIN KROSER, M.D., ranked third in the graduating class of 40 at Woman's Medical College.

Dr. Kroser, born in Philadelphia, graduated from Philadelphia High School for Girls and received her B.A. degree in 1953 from Temple University, where she had a Senatorial scholarship. Dr. Kroser, married while in medical school, is a member of Alpha Omega Alpha. Her special interests include music, theatergoing, and reading.

Her internship is at Philadelphia General Hospital.

LILLIAN HOFFMAN LOCKHART, M.D., ranked in tenth place in a class of 130 graduates of The University of Texas Medical Branch, Galveston. Dr. Lockhart, 1 of 9 women to graduate, is interning at John Sealy Hospital in Galveston.

Dr. Lockhart was born and received her early education in Columbus, Texas. She received her B.A. degree from Rice Institute in Houston, and did graduate work at the University of Texas Medical Branch as a research assistant in the Department of Anatomy; she also served as a laboratory assistant in anatomy.

She was a member of Alpha Epsilon Iota, Mu Delta, Sigma Xi, and Alpha Omega Alpha. She served as Secretary of the junior and senior classes in medical school.

Dean D. Bailey Calvin said: "Dr. Lockhart stood very high in her class. The award will be a great inspiration to her, and it certainly is an honor to The University of Texas to have her receive this recognition of merit."

Dr. Lockhart's hobbies are gardening and music. Her greatest interests are her children: a boy and twin girls.

MARJORIE MERRITT MENGEDOHT, M.D., 1 of 3 women in a class of 73, was graduated in sixth place from the Medical College of South Carolina. Her premedical work was taken at Duke University, where she received a B.S. degree in zoology in 1953 and "made" the honorary Dean's List. She had been graduated with honors from Easley High School, South Carolina.

A member of Alpha Omega Alpha and Alpha Epsilon Iota, Dr. Mengedoht spent summers between medical school years counseling in the South Carolina Orthopedic Camps for Children and externing at Self Memorial Hospital in Greenwood and at Roper Hospital in Charleston.

Marriage to a classmate, Daniel Edward Mengedoht, during their sophomore year launched a "teamship" that the couple expect to carry into practice in their native South Carolina. "It was a challenge to enter married life while still in medical school, but in retrospect I believe that our decision was wise since we have enjoyed our school and home work, as well as our play, as a team. We are excitedly awaiting the arrival of our first baby on March 4, 1958." Dr. Mengedoht will take a leave of absence from her internship at the Teaching Hospitals of the Medical College of South Carolina to welcome the baby, but plans to

resume and complete her internship and then enter a residency in pediatrics while her husband serves a tour of duty in the U.S. Navy.

Dr. Mengedoht gives much credit for her accomplishments to her mother, who had also wished to study medicine and who proved a staunch "supplier of moral as well as financial support." She pays warm tribute also to "our family physician, Dr. C. M. Tripp of Easley, who has been a great inspiration and help to me in my personal life."

HELEN CLAIRE OELS, M.D., ranked second in the graduating class of 40 at Woman's Medical College of Pennsylvania. Dr. Oels was born in Philadelphia and graduated from The Little Flower Catholic High School for Girls. She received her B.S. degree from Chestnut Hill College, where she made the Dean's List for four years.

She was the recipient of a four year competitive tuition scholarship at Woman's Medical College and the Westinghouse National Science Talent Search trip and scholarship. She received the award for the highest average in her freshman year and the Soroptimist award of Woman's Medical College in 1956 for her record in the third year. She is a member of Alpha Omega Alpha.

Dr. Oels worked in research at Temple University Medical School during the summer. Her hobbies are photography, bridge, and reading.

She is serving her internship at Philadelphia General Hospital.

MARILYN RAASCH, M.D., 1 of 4 women to be graduated from Marquette University School of Medicine, Milwaukee, ranked sixth in her class of 97.

Dr. Raasch was born in Milwaukee in 1932. She graduated from Marquette College of Liberal Arts before entering medical school. She served as Chairman of the Student Honor Awards and Scholarship Committee.

Dr. Raasch is interning at the Evangelical Deaconness Hospital in Milwaukee.

MARY ORDELL RAY, M.D., received her degree from the University of Louisville School of Medicine, ranking tenth in a class of 90 students. Her home is in Melvin, Ky. She has a rotating internship at the University of Tennessee Memorial Research Center and Hospital, Knoxville.

DOROTHY ALYENE REESE, M.D., ranked in fifth place in her graduating class at the Medical College of Alabama. There were 3 women in a class of 74.

Dr. Reese was born in Birmingham, Ala., in 1931. She received a full-expense, four year scholarship to Alabama College in Montevallo, from which she received her B.S. degree "with highest honors" in 1953. She was listed in Who's Who Among Students in American Universities and Colleges; was elected to Alpha Omega Alpha in her junior year in medical school; and served as Secretary of the class and Secretary of the Student Council during her sophomore year.

Her hobbies are music and reading.

She is interning at Charity Hospital of Louisiana in New Orleans.

RANDI V. ROSVOLL, M.D., 1 of 4 women in a class of 88, graduated in seventh place from the George Washington School of Medicine.

Dr. Rosvoll was born in Trondheim, Norway, in 1928, and came to the United States in 1949. She received a B.S. degree from The American University in 1953.

Dr. Walter Bloedorn said: "Miss Rosvoll has been a valuable member of the senior class of 1957 and is highly recommended for this award."

She is interning at Garfield Memorial Hospital in Washington, D.C. Her interests "outside of medicine" are "the great outdoors—skiing, fishing, mountains and forest, flora and fauna."

HILDA SCHEFFLER, M.D., graduated in sixth place from the College of Medical Evangelists, Los Angeles. She spent two of her premedical school years at the Canadian Union College in Alberta, Canada, and the third and fourth years at La Sierra College, Arlington, Calif.

Born in Germany, Dr. Scheffler grew up in a small tourist village in Northern Ontario, Canada. She interrupted her school program for three years to teach and for two more years to cook and provide industrial first aid in the forests of British Columbia. Cooking, camping, hiking, and sewing are her favorite off-duty activities.

Dr. Scheffler is interning at the Glendale Sanitarium and Hospital, Glendale, Calif.

NINA BENCICH WOODSIDE, M.D., ranked fifth in the graduating class of 40 at Woman's Medical College.

Dr. Woodside was born in Washington, D.C., and graduated from Theodore Roosevelt High School. Her B.S. degree was received from George Washington University in 1953. She married Byron C. Woodside while in her junior year at medical school and has one child. Her hobbies are sewing, bicycling, and reading.

A member of Alpha Omega Alpha, Dr. Woodside is serving her internship at the Hospital of Woman's Medical College.

VIRGINIA E. YOUNG, M.D., was 1 of 5 women in her class of 94 at the University of Maryland School of Medicine. She was graduated with a scholastic rating in the upper 10 per cent of the group in spite of the fact that she carried on a variety of activities to finance her education. She is serving her internship at Boston University.

Born in Saginaw, Mich., Dr. Young lived also in Ohio, New York, and New Jersey, graduating from the high school in Cranford in the last state. She went to Vassar College on a scholarship, working part time while majoring in chemistry, and won a Phi Beta Kappa key. She was graduated in 1953.

Dr. Young held summer jobs as a seamstress, as an attendant in a mental hospital, and as a research assistant at Brookhaven National Laboratories. During three years in medical school, she worked part time at South Baltimore General Hospital in the blood bank and in pediatrics; summers were spent in work on pediatrics, microbiology, and neurology.

She was elected to Alpha Omega Alpha. Her hobbies are good music, swimming, sewing, and knitting.

THESE WERE THE FIRST

DR. MIRIAM BITTING-KENNEDY of Richmond, Va., was graduated in 1889 from the Woman's Medical College of Pennsylvania, and moved to Yonkers, N.Y., after her marriage to Joseph Kennedy. She then went to Montclair, N.J., where, at her suggestion, open-air classes for children were established. They are thought to be the first in this country. Dr. Bitting-Kennedy died in 1925 at the age of 68.

DOROTHEA BOCCHI of the Fifteenth Century was a doctor of medicine and philosophy. She took over her father's chair at the University of Bologna and taught medicine for many years in that institution.

DR. MADELAINE RAY BROWN of Cambridge, Mass., who was graduated from Johns Hopkins University School of Medicine in 1927, was the first woman intern at the Boston City Hospital. She was also Assistant Neurologist at the Massachusetts General Hospital, Chief of the Department of Neurology and Psychiatry at Mt. Auburn Hospital, Cambridge, and Instructor in Neurology at Harvard Medical School. Dr. Brown was one of the recipients of the Elizabeth Blackwell award in 1954.

DR. MARY MAWSON NEFF of Los Angeles, who was graduated in 1900 from the Iowa State Medical College, developed an "occupation" movement in the Long Island State Hospital, which is thought to have been the first attempt to provide occupational programs for state hospitals for the insane.

—From the ELIZABETH BASS Collection;
Rudolph Matas Medical Library,
Tulane University, New Orleans.

(Upper) Killarney. *(Middle)* Edinburgh. *(Lower)* Stratford.

MWIA
1958 INTERNATIONAL TOUR

The tour to Europe offered in connection with the MWIA's Eighth Congress in London is a project in which sightseeing, professional programs, and relaxation are extremely well balanced.

Dublin, Belfast, Edinburgh, London, Stratford-on-Avon, Bruges, and Brussels with its World Fair; Paris, Chartres, and the Loire country; Barcelona and Madrid; the fabulous cities of Andalusia, Córdoba, Granada, Málaga, Algeciras, and Sevilla; and Lisbon are some of the exciting highlights of the sight-seeing program.

Visits to the famous maternity hospital (Rotunda) in Dublin; to Edinburgh University and the Royal Free Hospital; to the Sorbonne, Pasteur Institute, and St. Louis Hospital in Paris; to various institutions in Barcelona; to the University and Institute of Spanish Culture in Madrid; and to the Instituto Portuguese de Oncologia in Lisbon will comprise the professional program, besides, of course, the Congress program in London and social meetings with local medical women everywhere.

The beautiful Irish countryside with Killarney, Glengaridd, Cashel and Blarney castles, and Glendalough; the Scottish Highlands with Loch Lomond and Loch Ness, Oban and the mysterious island of Iona, the Stones of Clava, Balmoral, Braemar, St. Andrews, the Firth of Forth, and the Trossachs; the Lake District, the Welsh mountains and coast, Stonehenge, Biarritz, the Basque countries and the Pyrenees, Malorca and the plains of Castile, with Toledo, Segovia, Avila and the Escorial, and finally the sandy beach of Estoril—all these will afford the maximum of recreation in unique surroundings.

Performances at the famous Abbey Theater in Dublin, the Shakespeare Memorial Theater in Stratford, and the Opera and Folies Bergeres in Paris, and the optional attendance of a bullfight in Spain will provide some of the additional entertainment.

The entire Tour, leaving New York June 26, 1958, and returning Aug. 24 will cost $1,945. Those unable to participate in the full tour will have the following choices:

Pre-Congress. Part I: From New York June 26 to Eire, North Ireland, Scotland, Wales, and England, ending July 15 upon arrival in London. The cost of Part I, New York to New York, is $995, all inclusive. Part II: The stay in London during the MWIA Congress, July 15 to 21, is not included in the Tour price, since these arrangements are being made by the MWIA.

Post-Congress. Part III: July 22 to 30, to Bruges, Brussels and the World Fair, and Paris and Part IV: July 30 to Aug. 24, to the Basque Country, Spain, and Portugal together cost $1,495. Part III is optional since some members may wish to take part in the post-Congress tours in the British Isles being arranged by the MWIA; a refund of $100 will be granted members omitting this part and joining Part IV in Paris after staying over in England at their own expense. Members who must return earlier may leave the group in London, Paris, or Madrid, returning directly to New York by plane, and proportionate refunds will be granted. Extensions may be arranged according to individual desires and also trans-Atlantic transportation by ship for those who prefer this. Friends and relatives, male and female, are invited to join the Tour. For further details, write immediately to Dr. Ada Chree Reid, 118 Riverside Drive, New York 24, N.Y.

(Upper) Paris. *(Middle)* Amboise Castle, France. *(Lower)* Madrid.

Opportunities for Women in Medicine

AWARDS

Medical Writing. The second annual Silberman Foundation award for excellence in medical writing has been announced by the Delaware Valley (Delaware) Chapter of the American Medical Writers' Association. The first prize is $200 and other prizes will be awarded. Interns and resident staff members of AMA-accepted hospitals are eligible. Unpublished case reports must be submitted before March 1, 1958. For further information, write to Dr. Hugh Robertson, 255 S. 17th St., Philadelphia.

Nutrition. Nominations for the 1958 Borden award in nutrition and the 1958 Osborne and Mendel award for research have been opened by the American Institute of Nutrition. For full information, write to Office of the Secretary, Room 9D 20, Building 10, National Institutes of Health, Bethesda 14, Md.

FELLOWSHIPS

Pediatrics. Twelve or more fellowships will be granted as of July 1, 1958, by the American Academy of Pediatrics, to pediatric residents in need of financial assistance to complete their pediatric training for the fiscal year 1958-1959. They carry stipends of $500 to $1,000, depending on length of time required to complete training and upon need. The deadline for applications is March 1, 1958. A grant from Mead Johnson has made these fellowships possible. For complete details, write the American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Ill.

MEETINGS

Heart. Newest techniques in heart surgery will be discussed by leading cardiovascular surgeons at an all-day conference at the Waldorf-Astoria on Jan. 28, under the auspices of the New York Heart Association. The morning will be devoted to a panel discussion of cardiac surgery, led by four eminent physicians, and the afternoon session will be devoted to public health aspects of the problem.

Ophthalmology. A second cruise congress from Feb. 1-14 will be held by the Pan American Association of Ophthalmology on board the S.S. Queen of Bermuda. Symposia, papers, motion pictures, seminars, and exhibits will stress subjects of current interest in diseases of the eye. Meetings with local ophthalmological societies and visits to hospitals and medical schools in port cities will be arranged. The itinerary includes a day each in San Juan, Puerto Rico; Ciudad Trujillo, Dominican Republic; Kingston, Jamaica; Port-au-Prince, Haiti; and Nassau, Bahama Islands. Reservations may be made by writing to Mr. Leon V. Arnold, 33 Washington Square W., New York City 11.

Psychosomatic Medicine. The American Psychosomatic Society will hold its Fifteenth Annual Meeting at the Netherland Hilton in Cincinnati, March 29 and 30, 1958. Further information may be obtained from Dr. Theodore Lidz, Chairman, American Psychosomatic Society, 551 Madison Ave., New York.

Associate
in pediatrics and internal medicine.
American born, with civic consciousness.
Free of race prejudice.
Community of 25,000.
Air-conditioned office, modern equipment.
Salary basis for first year.
Apply: Mary Louise Newman, M.D.
814 W. State St.
Jacksonville, Ill.

News of Women in Medicine

Dr. Frances Baker of San Mateo, Calif., has assumed the office of Secretary of the American Congress of Physical Medicine and Rehabilitation.

Dr. Katharine Boucot of Philadelphia presented a paper on "Hemoptysis in Older Men" before the Ninth Annual Scientific Assembly of the Missouri Academy of General Practice, held in Jefferson City, Oct. 30-31.

Dr. Jessie Laird Brodie of Portland, Ore., is the recipient of a $1,500 grant from Mead Johnson, to be used for technical assistance in research work on galactosemia. The work is being carried on in the Pathology Department of Good Samaritan Hospital in Portland. For over seven years Dr. Brodie has been observing a family that includes three living members with galactosemia and one now-deceased galactosemic member. Her initial report in 1951 was the first case of this disease reported in the Spanish literature. Dr. Brodie is a life member of the AMWA and has held offices in the Portland Branch and the Northwest Region.

Dr. Elizabeth Corbett of San Jose, Calif., spoke on laboratory procedures and the work of the pathologist before the First Annual Meeting of the American Association of Medical Assistants in San Francisco.

Dr. June M. Dobbs has joined the staff of the Temple University Medical Center to work at the Rehabilitation Unit of St. Christopher's Hospital for children. Dr. Dobbs, a native of Scotland, received her M.D. degree from Aberdeen University and her M.P.H. degree at the School of Public Health, Columbia University, in 1957.

Dr. Mary Ellen Engle of New York Hospital, pediatric cardiologist, will be a member of the panel concerned with surgical correction of congenital defects on Jan. 28, Waldorf-Astoria, New York City, at the Annual New York Heart Association Conference.

Dr. Sarah H. Hardwicke has been appointed by the United Mine Workers of America as Associate Clinical Director for 10 memorial hospitals in Kentucky, West Virginia, and Virginia. She took over her new duties on Nov. 1 in Washington, D.C. Dr. Hardwicke was formerly Assistant Director of Strong Memorial Hospital, Rochester, N.Y. She also has been an instructor and Assistant Attending Pediatrician at the University of Rochester, Strong Memorial Hospital, Cornell University, and New York Hospital.

Dr. Rebecca Liswood of New York City spoke to the East Nassau (N.Y.) Section of the National Council of Jewish Women on "Sexual Harmony in Marriage." Dr. Liswood is an associate member of the American Association of Marriage Counselors.

Miss Susan Myers, freshman at Temple University Medical Center, was the member of a father-daughter team who attended the Medical Alumni's freshman "Mixer."

Temple University reports 1957 enrollment of 135 freshmen and says: "Included among the registrants are 13 women, a higher than usual distaff representation."

Dr. Eleanor Jane Watson was one of 21 Mayo Foundation fellows to receive a master of science degree at the University of Minnesota in June. Dr. Watson received her degree in psychiatry.

The American Medical Women's Association extends sympathy to the family of Dr. Gerty Theresa Cori, who died in St. Louis, Oct. 26, after a long illness. Dr. Cori shared with her husband, Dr. Carl F. Cori, the 1947 Nobel prize.

Book Notices

Editor's Note: These reviews represent the individual opinions of the reviewers and not necessarily those of the members of the Editorial Board of the JOURNAL.

BIOCHEMICAL INDIVIDUALITY. By Roger J. Williams, Ph.D., Professor of Chemistry, and Director of Bio-Chemical Institute, University of Texas. Pp. 214, illustrated (line drawings and tables). Price $5.75. John Wiley & Sons, Inc., New York, 1957.

To an experimentalist who regards individual variability as one of the malevolent features of biological research, it is refreshing to find a book devoted wholly to biological individuality. A fundamental principle, enunciated by the author in terms of what he calls the genetotrophic approach, proposes that genetic individuality is reflected in measurable features such as morphology, chemistry, enzymology, and nutrition. In the first chapter the author establishes, simply and convincingly, that the normal individual does not exist and that every human being is a deviate in some respect. For example, if it may be assumed that 95 per cent of a population is normal with regard to a single measurement, $(0.95)^2$ or 0.90 would be normal in regard to two measurements, only $(0.95)^{10}$ or 0.6 would be normal for 10 measurable items, and $(0.95)^{100}$ or only 0.0059 would be normal for 100 items.

The remainder of the book is devoted to a documentation of this thesis. Despite the title, the fields of human measurement range widely—from variations in size, form, and location of organs to variations of amino acid excretion in urine and saliva. In the 14 chapters, comprising 211 pages, there is a wealth of material on anatomic and chemical individuality, on varieties in patterns or enzymes and endocrine activities, on variable sensitivities to drugs, and on individuality in nutritional requirements. Final chapters are devoted to biological and public health implications of this thesis.

The chapters on nutritional requirements and excretion patterns are of particular interest in that they represent largely results from the author's own laboratory. It is fascinating to learn that patterns of amino acid excretion in the urine are highly characteristic of an individual, providing a distinguishing feature hardly less characteristic than the fingerprints. Also surprising, and perhaps somewhat dismaying to nutritionists, are the wide variations in requirements for inorganic ions, amino acids, and vitamins in man.

In the final chapters the author points out that an awareness of human individuality may affect greatly advances in our understanding and treatment of disease. He suggests that diseases of obscure origin, for example, dental caries and mental illness, may fruitfully be studied by seeking "patterns" of individuality among a wide variety of biochemical measurements in individuals suffering from these conditions.

This small volume is written in a readable, thought-provoking style, characteristic of the author's unorthodoxy and originality. The material should be of interest to students and practitioners of medicine and biological sciences.

—Sidney Weinhouse, Ph.D.

MARTIUS' GYNECOLOGICA OPERATIONS. Translated and Edited by Milton L. McCall, M.D., F.A.C.S., Professor and Head, Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, and Obstetrician and Gynecologist-in-Chief, L.S.U. Unit, Charity Hospital of Louisiana at New Orleans; and Karl A. Bolten, M.D., formerly Instructor, Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, New Orleans, and Scientist, L.S.U. Unit, Charity Hospital of Louisiana at New Orleans. Pp. 405, with 450 illustrations by Kathe Droysen. Price $20.00. Little, Brown and Company, Boston, 1957.

This is the second English translation of Professor Martius' work, which was published in 1936.

The book limits itself to operative gynecology. Some operations described are not frequently performed in this country. Others are opposed to present-day American thought.

The remarkable feature in Martius' book is the number and quality of the illustrations. A separate illustration is used for each step of an operation. Emphasis is placed on the anatomic approach to female pelvic surgery, and the topographic anatomy of individual operations is beautifully portrayed along with the operative technique. Every step in an operation is delineated, with the necessary anatomic details of surrounding tissues clearly shown.

The chapters devoted to vaginal plastic procedures and to the anatomic mechanism of the female vesical sphincter are particularly instructive. The last chapter deals with some abdominal operations that occasionally must be done by the gynecologist.

On the whole this is a worth-while book for all gynecologists' libraries.

—Helen K. Grace, M.D.

Index, Volume 12 (1957)
Journal of the American Medical Women's Association

TITLES

ARTICLES

Adeno-pharyngeal-conjunctival viruses: Review of literature (Sobel), 67
Analysis of 719 cesarean sections at the New England Hospital (Phillips), 136
Ataxic form of poliomyelitis (Shaw), 434
Be kind to editors (Geib and Smith), 13
Case of severe erythroblastosis fetalis (fetal hydrops) with recovery (Frankowski), 259
Chemotherapy of leukemia and lymphoma (Wallerstein, Aggeler, and Hoag), 417
Chronic peptic ulcer in children (Ortmayer), 95
Effect of radiation on human heredity (Eve), 199
Endocrine disturbances revealing skin manifestations (Finkler), 338
Evaluation of hyperbilirubinemia as a guide for the use of exchange transfusions in hemolytic disease in the newborn infant (Pierce and Rigor), 247
Executive: Priority health problem (Vaschak), 10
Familial autonomic dysfunction: Case report (Lorentz), 342
Family doctor's tasks and opportunities in the field of mental hygiene (Krapf), 212
Fellowships, a part of the education and training program of WHO (Messinezy), 216
Fight against nonvenereal treponematoses in Africa (Ferreira), 205
First public health college and training center in Ethiopia: Gondar College (Shousha), 209
Geriatrics and gerontology (Greisheimer), 37
Greetings from Iran to AMWA (Fahimi), 78
Heart disease after sixty-five (White), 127
Helpful hints for the geriatric patient (Mermod), 327
Hospitals run by women doctors: The Maternity and Children's Hospital (Ferrer-Franco), 17
How the AMWA can help me in the pursuit of my career (Copple), 25
How the AMWA serves medical women (Alejandrino), 186
Lepers in Easter Island: Treatment and conditions of life (von Behring), 75
Local treatment of acne with a hydrocortisone combination (Kuhn), 73
Long-continued adrenal hormone therapy in childhood nephrosis (Piel and Williams), 273
Malaria eradication as a world program (Weeks), 202
Medical indications for home teaching (Brownsberger), 42
Medicine as a profession (Van Loon), 51
Mediterranean anemia trait in adults (Kyhos and Corwin), 335
Mobile Psychiatric Clinic of the Medical College of Virginia (Denton), 377
Nervous control of respiration (Greisheimer), 8
Organization of poison information centers (Lindemann), 379
Panel on emotional health of the family (Nemir, Worcester, Friess, Parkhurst, Kleegman, Abbatte, and Lathrop), 391
Pediatric residency: Letter to an intern (English), 296
Plasma thromboplastin component (PTC) deficiency (Aggeler, Hoag, and Wallerstein), 280
Plastic surgery in non-malignant lesions: Of face, mouth, and jaws (Morani), 1
Presentation of a pneumotachograph with reference to respiratory distress in the newborn infant (de Vries, Vreeland, and Collins), 284
Psychiatric approach in educational therapy with emotionally disturbed children (Riese), 369
Resident training program (Thelander), 294
Reversed passive Rh sensitization in guinea pigs (Darrow and Shmigelsky), 241
Review of thrombocytopenic purpura in relation to pregnancy and the newborn infant (Isaacs), 255
Rheumatic fever: Progress in the last twenty years (McCue), 363
Ruth Renter Darrow and the etiology of hemolytic disease of the newborn infant (Sanford), 254
Sedatives, tranquilizers—then what? Inaugural address of new AMWA president (Kahler), 225
Septic abortion problems in Chile (Mahn H.), 99
Sigmund Freud: To the one hundredth anniversary of his birth (Meng, translated by Dunner), 171
Some aspects of cholesterol metabolism (Kritchevsky), 423
Streamlining the preventive management of inhalant allergy, with special reference to pollens and housedust: Woolley Memorial Lecture (Loveless), 383
Surgery and the geriatric patient (Gecht), 430
Symposium on disease and aging (Ryder, Ropes, Parsons, White, and Monroe), 157
Tumors in childhood and the role of a pediatric tumor board (Kushner, Siris, and Sherman, Jr.), 291
Unusual cause of intussusception: Report of a case (Haycock), 437
Value of hysterosalpingography in the diagnosis and therapy of infertility (Becker), 332
Women—as part of our nation's manpower resources (Majally), 144
Women doctors in Japan: Past and present (Ohara), 175
Work of WHO—1956, 219
WHO survey of the medico-social field (Malan), 45

AWARDS

Blackwell Awards of the New York Infirmary
Frantz, Virginia Kneeland, 188
Handy, Margaret I., 188

Lovejoy, Esther Pohl (see REPORTS, *International Night*)
Macklin, Madge Thurlow, 188

Medical Women of the Year
Bartlett-Tyson, Frances, 445
Brown, Madelaine Ray, 446
Cook, Clara G., 447
Frazer, Mary Margaret, 447
Kazmierczak, Mary J., 448
Sawyer, Grace M., 448

Scholastic Award Winners
FIRST PLACE
Bilbao, Marcia Kepler, 450
Deutch, Marguerite Goethe, 450
Ellington, Anna Louise, 451
Kaplan, Beatrice, 451

HONORABLE MENTION
Adams, Anita Coyne, 452
Block, Nancy Thoms, 452
Bravo, Olga Iguina, 452
Charache, Patricia Connamacher, 452
Edmonds, Mary Ellen, 452
Evans, Barbara Mae, 453
Foster, Eleanor Olsen, 453
Freedy, Lucy Vaughan Rawlings, 453
Friederick, Mary Ann, 453
Goldfarb, June Hadley, 453
Hellman, Dorothea Waelder, 453
Hirschhorn, Rochelle, 455
Hoekstra, Margaret Jane, 455
Houbalek, Lenke, 455
Howry, Cherie, 455
Hurley, F. Gertrude, 457
Jewel, Judith Graham, 457
Kroser, Lila Stein, 457
Lockhart, Lillian Hoffman, 457
Mengedoht, Marjorie Merritt, 457
Oels, Helen Claire, 458
Raasch, Marilyn, 458
Ray, Mary Ordell, 458
Reese, Dorothy Alyene, 458
Rosvoll, Randi V., 458
Scheffler, Hilda, 458
Woodside, Nina Bencich, 459
Young, Virginia E., 459

BIOGRAPHICAL DATA

Album of Women in Medicine
Bartlett-Tyson (Kleiner), 356
Darrow, Ruth Renter (Shmigelsky), 271
Ferrari, Myra Carcupino (Selvini), 60
Gardner, Emily (Lindemann), 414
Glover, Mary Elizabeth (Thelander), 307
Hubert, Anna (Edward), 30

Candidates for Offices of AMWA
Fischer, Elizabeth R. (treasurer), 109
Frazer, Mary Margaret (assistant treasurer), 109
Hartgraves, Ruth (first vice-president), 108
Henry, Mary Mitchell (corresponding secretary), 110
Ryder, Claire F. (recording secretary), 110
Schaeffer, Jane (second vice-president), 109
Wright, Katharine W. (president-elect), 108

Guest Editors
Riese, Hertha, 376
Shmigelsky, Irene, 246
Thelander, Hulda E., 279
Vaschak, Mathilda R., 341

Past Presidents of AMWA
Blount, Anna Ellsworth (Bennett), 86

Special Features
Geib, M. Eugenia (Waugh), 80
New AMWA president—1957-1958 (*On* Kahler, Elizabeth S. [Platt]), 224
Our new editor (*On* Baumann, Frieda [Waugh]), 81
Portrait honors medical women: *Special article on* Walker, Mary E. [Furman]), 443
Van Hoosen, Bertha
—as a friend (Menendian), 22
—as a teacher (Gardner), 22
—and the MWIA (Lovejoy), 22

BOOKS

Notices
Ageing in transient tissues (Wolstenholme and Millar), 124
Alcoholism (Thompson), 238
Anesthesia for obstetrics (Hingson and Hellman), 239
Antibiotics and antibiotic therapy: Clinical manual (Hussar and Holley), 64
Arthroplasty (Buxton), 92
Atlas of general surgery (Wilder), 91
Background for tomorrow (Frankenthal), 36
Basic principles of parliamentary law and protocol (Grumme), 93
Basic surgical skills. Manual with appropriate exercises (Tauber), 92
Biochemical determinants of microbial diseases (Dubos), 154
Biochemical individuality (Williams), 464
Biochemistry of the developing nervous system (Waelsch), 91
Blakiston's new Gould medical dictionary (Hoerr and Osol), 197
Body fluids: Basic physiology and practical therapeutics (Elkington and Danowski), 36
Campbell's operative orthopaedics (Speed and Knight), 153
Cardiovascular surgery (Henry Ford Hospital international symposium), 64
Clinical pathologic conferences of Cook County Hospital: Volume 1. Cardiovascular-renal problems (Popper and Kushner), 63
Clinical recognition and management of disturbances of fluid balance (Bland), 240
Coagulation of blood: Methods of study (Tocantins), 34
Color atlas of pathology (U.S. Naval Medical School), 64
Counseling in medical genetics (Reed), 36
Culture, psychiatry, and human values (Opler), 153
Denial of illness: Symbolic and physiological aspects (Weinstein and Kahn), 125
Dermatology (Pillsbury, Shelly, and Kligman), 239

Diabetic's cookbook (Strachan), 91
Diagnostic procedures for virus and rickettsial diseases (Francis, Jr., and Smadel), 415
Differential diagnosis: Interpretation of clinical evidence (Harvey and Bardley III), 93
Diseases of the endocrine glands (Soffer), 326
Diseases of the skin (Sutton), 239
Doctor and patient (O'Neill), 34
Essentials of histology (Hoskins and Bevelander), 198
Experimental tuberculosis, bacillus and host. With an addendum on leprosy (Wolstenholme and Cameron), 124
Fluoroscopy in diagnostic roentgenology (Deutschberger), 126
Founders of neurology. One hundred and thirty-three biographical sketches (Haymaker), 272
Fundamentals of psychoanalytic technique (Braatøy), 155
Genetics and metabolism (Wagner and Mitchell), 91
Growth at adolescence (Tanner), 65
Gynecology: Surgical techniques (Lowrie), 153
Head injuries and their management (Echlin), 155
Hemorrhagic disorders: Clinical and therapeutic approach (Stefanini and Dameshek), 65
How to overcome colitis (Montague), 154
Human ovulation and fertility (Farris), 416
Human pathology (Karsner), 34
Human problems of a state mental hospital (Belknap), 272
Hypotension: Shock and circulatory failure (Weil), 65
Interpretation of the unipolar electrocardiogram (Myers), 272
Introduction to parasitology, with special reference to the parasites of man (Chandler), 63
Introduction to virology (Dalldorf), 36
Ion exchange and adsorption agents in medicine. Concept of intestinal bionomics (Martin), 90
Mammalian fetus: Physiological aspects of development (Cold Spring Harbor symposia on quantitative biology), 326
Man above humanity: History of psychotherapy (Bromberg), 34
Management of emotional problems in medical practice (Liebman), 415
Man's back (Willis), 153
Manual of fractures and dislocations (Stimson), 154
Martius' gynecological operations (McCall and Bolten), 464
Maternal emotions. Study of women's feelings toward menstruation, pregnancy, childbirth, breast feeding, infant care, and other aspects of their femininity (Newton), 66
Medical effects of the atomic bomb in Japan (Oughterson and Warren), 238
Medical parasitology. For medical students and practicing physicians (Sawitz), 416
Mental hygiene in public health (Lemkau), 64
Methods of enzymology (Colowick and Kaplan), 125
Morphology of human blood cells (Diggs, Sturm, and Bell), 416
Natural childbirth (Atless), 238
Neurochemistry. Chemical dynamics of brain and nerve (Elliott, Page, and Quastel), 124
Neuroses in clinical practice (Laughlin), 155
Oral cancer and tumors of the jaws (Sharp, Bullock, and Hazlet), 415
Origins of resistance to toxic agents (Sevag, Reid, and Reynolds), 66
Paper electrophoresis (Wolstenholme and Millar), 240
Pathology for the surgeon (Boyd), 126
Pathology seminars (Ackerman, Allen, Stout, Ash, and Willis), 197
Peptic ulcer: Diagnosis and treatment (Barborka and Texter, Jr.), 36
Pharmacological basis of therapeutics (Goodman and Gilman), 126
Pharmacology and oral therapeutics (Dobbs), 326
Pharmacopoea internationalis, editio prima (WHO), 154
Physical diagnosis (Major and Deld), 124
Physiology and anatomy (Greisheimer), 90
Pictorial history of medicine (Bettmann), 153
Poliomyelitis (WHO monograph), 90
Potassium metabolism in health and disease (Holley and Carlson), 35
Practical management of disorders of the liver, pancreas and biliary tract (Twist and Oppenheim), 123
Preparing for motherhood. Manual for parents (Meaker), 93
Prevalence of people (Bates), 91
Prevention of disease in everyday practice (Givner and Bruger), 92
Principles of medical statistics (Hill), 66
Proctology (Bacon, Ross, and Recio), 198
Prolonged and perplexing fevers (Keefer and Leard), 63
Psychoanalysis and ethics (Feuer), 65
Psychocutaneous medicine (Obermeyer), 64
Psychopharmacology (Kline), 123
Pulmonary carcinoma: Pathogenesis, diagnosis and treatment (Mayer and Maier), 416
Recovery room—Immediate postoperative management (Sadove and Cross), 198
Regional enteritis: Diagnostic and therapeutic considerations (Boyce), 63
Relief of symptoms (Modell), 66
Rheumatoid arthritis and psoriasis. Internal and cutaneous manifestations of the permanent endoparasitism in the homo sapiens. Their common etiology, pathogenesis, and specific vaccine therapy (Benedek), 125
Roberts' nutrition work with children (Martin), 125
Roentgen signs in clinical diagnosis (Meschan), 272
Sexual precocity (Jolly), 35
Short history of medicine (Ackerknecht), 65
Strabismus. Diagnosis and treatment (Cushman), 326
Studies on fertility, 1955 (Harrison), 123
Surgery for general practice (Richards), 240
Surgery of the ambulatory patient (Ferguson), 126
Surgical forum (American College of Surgeons congress), 92
Synopsis of gynecology (Crossen), 198
Techniques and procedures of anesthesia (Adriani), 197
Textbook of medical physiology (Guyton), 197
Textbook of medicine (Cecil and Loeb), 93

Therapeutic use of artificial radioisotopes (Hahn), 154
Treatment of renal failure: Therapeutic principles in the management of acute and chronic uremia (Merrill), 123
Urology (Campbell), 64
Urology (Clarke and Del Guercio), 155
Viral and rickettsial diseases of the skin, eye and mucous membranes of man (Blank and Rake), 35
Wine as food and medicine (Lucia), 35

Received
American drug index (Wilson and Jones), 94
Arthroplasty (Buxton), 156
Cancer of the esophagus and the stomach (Wangensteen), 156
Cancer of the thyroid (Pemberton and Black), 94
Child with rheumatic fever (Children's Bureau), 94
Clinical orthopedics (De Palma), 94
Composting; sanitary disposal and reclamation of organic wastes (Gotaas), 156
Control of insect vectors in international air traffic: Survey of existing legislation (WHO), 156
Dried BCG vaccine (Obayashi), 94
Epitome of the pharmacopeia of the United States and the national formulary (AMA), 94
Follow-up study of World War II prisoners of war (Cohen and Cooper), 94
Health observation of school children (Wheatley and Hallock), 156
Malaria: World problem (Pampana and Russell), 94
Mayo Clinic (Wilder), 156
Mental health planning for social action (Stevenson), 156
Merck manual of diagnosis and therapy (Lyght), 156
New and nonofficial remedies, 1955 (AMA), 156; 1956, 196
Obstetric practice: Handbook for the general practitioner (Speert and Guttmacher), 156
Occupational health (WHO), 94
Office assistant in medical and dental practice (Frederick and Towner), 196
Operative orthopedic clinics (Cozen and Brockway), 94
Pharmaceutical research, Carbisulphoil Company, 156
Practical neurology (Davidoff and Feiring), 94
Psychiatry for the family physician (Aldrich), 156
Quest into the environmental causes of cancer of the lung (Hueper), 196
Statistical program for the Department of Health of the city of New York (committee on statistical program for city of New York), 156
Training of sanitary engineers (Ing.), 156
Trends and issues in psychiatric residency programs (Group for Advancement of Psychiatry), 94
Tuberculosis in the army of the United States in World War II: Epidemiological study with an evaluation of x-ray screening (Long and Jablon), 94
WHO technical report series
No. 77: Expert committee on environmental sanitation, 94
No. 78: Expert committee on rheumatic diseases, 94
No. 82: Expert committee on rabies, 94
No. 92: Joint ILO/WHO committee on the hygiene of seafarers, 94
No. 93: Expert committee on midwifery training, 94
No. 96: Expert committee on biological standardization, 94
No. 99: Joint FAO/WHO expert committee on meat hygiene, 196
No. 100: Amputees and prostheses; report of a conference on prosthetics, 196
No. 101: Poliomyelitis vaccination; preliminary review, 196
No. 102: Expert committee on drugs liable to produce addiction, 94
No. 103: Malaria conference for the Western Pacific and South-East Asia regions, 156
No. 104: Food hygiene, 156
No. 106: Expert committee on trachoma, 156
No. 109: Expert committee on professional and technical education of medical and auxiliary personnel, 156
No. 110: Expert committee on insecticides, 156
No. 112: Tuberculosis control: Plans for intensified inter-country action in Europe, 156
No. 114: Toxic hazards of pesticides to man, 156
Yellow fever vaccination (WHO), 94
Your child from one to six (Children's Bureau), 156

Special Reviews
Psychobiological development of the child (Tenbrinck). Review of discussions on child development (Tanner and Inhelder), 222
Thanks offering (Tenbrinck). Review of women doctors of the world (Lovejoy), 195

CORRECTIONS

—on *These Were the First*, 152, 194, 268
—on *Book Notices*, 196

NEWS

Across My Desk
—*On* geriatrics (Majally), 32

AMWA Programs
—for 1956-1957, 29, 54, 79
—for annual meeting, 106, 142
—for midyear meeting of board of directors, 301, 347

Association
Booklet on health hints (international), 264
Cost for maternal and child welfare (medical economic news), 265
Equal rights amendment (legislation), 148
Immunization information for foreign travel (international), 264
International co-operation (international), 264
Medical education (international), 351
Medical school—Catalyst for community leadership (medical education), 186
"Patchwork" chemical laws (legislation), 265

Postdoctoral fellowships in research (medical education), 186
Standards have been raised (medical education), 186
Time to act (legislation), 187
Voluntary pension plans (legislation), 148

Branch
Arkansas junior branch, 351
Branch one, 146
Branch eleven and the AMA exhibit, 232
Branch eighteen, 351
Branch forty-seven, 351
Highlights from branch delegate reports, 147
History of branch four, New Jersey (Hauck and Brodkin), 349

Fillers
Better health for city children, 433
Child therapy, 180
Dental care for bedfast patients, 260
FDA denies sale of hydrocortisone lotions without prescription, 180
Food and education, 436
Institute in social gerontology, 297
International travel and disease, 211
"Medicalese," 357
—*on* medical news and Barnes, Ida C., 350
New journal on ultrastructure research, 290
Perinatal deaths, 433
—*on* solar cooking stove, 52
Tranquilizers, 439

Medical Highlights
Antibody production tripled by STH, 223
Bed rest in pulmonary tuberculosis, 440
Biological relationships, 139
"Blood test" for mental illness, 223
Central nervous system, 140
Cerebral danger in leukemia therapy, 182
Cerebrovascular research, 345
Cervical cancer, 408
Dramatic drop in poliomyelitis, 262
Excerpta Medica and Soviet medicine, 223
Glycerol protection in sperm storage, 182
Hypothermia for heart repair, 181
Influenza, 298
Influenza-pneumonia deaths, 440
Mortality from heart disease, 441
New strain of influenza virus, 262
Prevention of rheumatic fever and prophylaxis against bacterial endocarditis, 181
Rabies, 440
Relationship of phosphoramides and cancer, 182
Report from Caracas, 346
Smoking and lung cancer, 408
Tumor-grown viruses inhibit mouse cancer, act in some patients, 299
Two-way communication for medical conventions, 181
Vitamins increase resistance to infection, 299
World Medical Association, 345

—*of Woman's Medical College of Pennsylvania*
Baumann, Frieda, 269
Boucot, Katharine R., 269
Crump, Jean, 269
Daniels, Anna, 269
Fay, Marion Spencer, 269
Glass, Dorothea D., 269
Lemon, Eloise, 269
Loeffler, Emily, 269
Mikelberg, Rose, 269
Morani, Alma Dea, 269
Nachod, Grace R., 269
Pike, Anne H., 269
Rabinoff, Sophie, 269
Scott, Rita E., 269
Spears, Mary M., 269
Taylor, Anne Gray, 269
Waugh, Elizabeth S., 269

—*of Women in Medicine*
Abbate, Grace, 236
Adler, Anita, 151
Aleman, Ruth G., 88
Allen, Frances A., 31, 236
Antonetti, Melba, 354
Apgar, Virginia, 87
Aran, Ulka Sema, 190
Bachman, Kay, 61
Bacon, Mary, 270
Bagley, Elizabeth, 305
Baines, Anne W., 305
Baker, Frances, 463
Barringer, Emily Dunning, 190
Barsness, Nellie, 413
Bateman, Jeanne C., 190, 305, 354
Bellows, Marjorie T., 413
Belton, M. Kathleen, 88
Benedek, Therese, 413
Bernard, Marcelle, 87
Biele, Flora Herman, 61
Bierman, Jessie, 305
Black, Elinor F. E., 61
Blume, Sheila, 115
Bodel, Phyllis, 115
Bott, Phyllis A., 190
Boucot, Katharine R., 151, 463
Boyd, Mary R., 270
Bradford, Stella S., 270
Bramwell, Edith, 151
Brauer, Ilse, 236
Brock, Thelma, 190
Brodie, Jessie Laird, 463
Brohult, Astrid, 88
Buchanan, Josephine J., 354
Buckwalter, Phyllis, 151
Carney, M. S., 354
Carr, Mary B., 270
Chasteney, Edith, 151
Church, Ruth E., 413
Comstock, Elizabeth, 354
Cook, Ellen, 88
Corbett, Elizabeth, 463
Cori, Gerty Theresa, 463
Corneliuson, Goldie B., 190
Coughlan, Alice, 270
Dalton, Naomi L., 190
Dees, Susan C., 61, 305
Dickie, Helen A., 190
Dobbs, June M., 463
Dodd, Katherine, 354
Dolan, Virginia, 151
Donahue, Wilma, 151
Dowd, Dorothy D., 354
Dumitru, Anna P., 151

Dunbar, Flanders, 413
Edenborough, Lucy L., 190
Eliot, Martha May, 31, 61, 191
Emery, Sara L., 236
Engle, Mary Allen, 413, 463
Ettinger, Alice, 151
Farquhar, Marilyn G., 87
Feinberg, Barbara R., 236
Fell, Honor B., 31
Fenton, Carol, 115
Fleischel, Maria, 270
Fleming, Joan, 354
Friess, Connie, 236
Fromm-Reichmann, Frieda, 61
Gairns, Lila J., 354
Gallagher, Mary V., 88
Gaynor, Evelyn, 115
Geiger, Sara G., 31
Geren, Betty Ben, 87
Ghostley, Mary C., 413
Giannina, Margaret Joan, 413
Giffin, Mary, 413
Gilder, Helena, 305
Gillis, Helen M., 236
Glassen, Mary, 236
Glosson, Esther M., 236
Golden, Margery, 151
Greisheimer, Esther M., 305
Grodsky, Pauline, 151
Grossman, Patricia L., 354
Guin, Grace H., 354
Guion, Connie M., 115
Gustavson, Sonia, 413
Hardwicke, Sarah H., 463
Hardy, Janet M., 305
Harlin, Fernande, 88
Heerdegen, Dorothy K., 354
Helwig, Floy, 190
Higbie, Barbara, 270
Hipple, Mary A., 87, 190
Hirschfield, Ilse, 413
Hodgkin, Dorothy, 61
Holly, Pearl B., 354
Holmes, Dorothy B., 354
Huang, Nancy N., 88
Hurd, Anna, 413
Hutchinson, Jane Kauderer, 354
Ingusall, Winifred, 270
Jackson, Caroline, 354
Jackson, Edith B., 236, 305, 413
Jackson, Laura G., 413
Jaques, J. Eugenia, 270
Jarvis, Marilyn A., 305
Johnson, Adelaide McF., 151, 413
Johnson, Evelyn, 354
Johnston, Mary Elizabeth, 305
Jonasson, Olga, 151
Jones, Edna M., 31
Jordan, Sara M., 151
Josselyn, Irene, 413
Kaempfer, Michelene, 151
Kahler, Elizabeth, 115, 236
Kanof, Naomi M., 354
Kaplan, Beatrice, 151
Kass, Elaine, 151
Kelch, Joan, 354
Kennedy, Elizabeth Smith, 355
Kerr, Charlotte, 355
Kinsey, Dera, 413
Kleegman, Sophia J., 115, 236
Knox, Harriet L., 270
Koll, Jane, 355
Kroeger, Hilda H., 270
Lendrum, Bessie L., 355
Leyden, Marie, 354
Lillick, Lois C., 305
Liswood, Rebecca, 463
Livingstone, Huberta M., 87, 355
Longfellow, Helen W., 236
Lovejoy, Esther Pohl, 270
Lowrie, Janice R., 236
Lück, Hilda, 305, 413
Lukens, Abbie Ruth, 190
Luse, Sarah A., 87
Lynch, Delia A., 270
McDaniel, Orianna, 413
McGrew, Elizabeth A., 115
McLaren, Ruth, 61
McNeal, Alice, 151
Macfarlane, Catharine, 31, 115, 413
Marchant, Betty Lou, 151
Markee, Shirley, 151
Marmorston, Jessie, 88
Merrick, Evelyn, 190
Metzer, Emma Weeks, 270
Miller, Ruth E., 236
Millet, Theresa, 354
Monahan, Elizabeth, 305, 413
Morgan, Margaret, 237
Moyer, Elizabeth K., 61
Mussey, Elizabeth L., 305
Myers, Susan, 463
Nadelhoffer, Luella, 190
Nemir, Rosa Lee, 236
Newman, Mary L., 190
Nicholson, Margaret M., 115
Norman, Leona R., 413
O'Brien, Sister Michael Maria, 151
Oettinger, Katherine Brownell, 191
Ohta, Yaeko, 191
O'Kane, Patricia, 88
O'Malley, Martha, 270
Oppenheimer, Ella, 354
Palmer, Alice E., 237
Parkhurst, Helen, 236
Payne, Mary Ann, 305
Petermann, Mary L., 88
Pick, Ruth, 413
Pincock, Carolyn, 115
Platt, Lois I., 115, 354
Poe, Mary F., 151
Potter, Ellen C., 270
Rader, Bertha, 413
Rayford, Claudia R., 413
Reid, Ada Chree, 191
Renshaw, Josephine, 354
Rioch, Janet, 191
Rogers, Adrianne, 115
Rosvoll, Randi, 31
Roth, Catherine H., 355
Roth, Grace, 61
Rundlett, Emilie, 270
Russell, Elizabeth A., 87
Ryder, Claire, 87, 191, 236
Sartwell, Mary K. L., 354
Schorsch, Hildegarde A., 237

Scott, Mildred Esther, 87
Shafer, June Carol, 115
Sher, Joanna, 151
Sherman, Mary, 191
Sigurdson, Thorbjorg, 305
Sikorsky, Lucy, 355
Simpson, Rita, 413
Smith, Margaret I., 305, 413
Speer, Alma Jane, 354
Sproul, Edith E., 306
Stephens, Natalie, 355
Stevens, Sarah L. C., 87
Stifler, Jean Rose, 87
Strother, Billie Fern, 306
Tate, Karin M., 236
Taussig, Helen B., 355, 413
Tavs, Louise, 31
Thomas, Caroline Bedell, 151
Trandem, S. Elinor, 31
Tyson, Frances B., 270
Van Fleet, Josephine, 237
Vodopick, Helen Ann, 61
Walkowiak, Lydia, 355
Watson, Eleanor Jane, 463
Weber, Gertrude M., 151
Webster, Augusta, 190, 355
Williams, Cicely D., 88
Williams, Margaret L., 305
Willoughby, Frances Lois, 191
Wilson, Ilse M., 413
Wilson, Marjorie P., 87
Worcester, Blandina, 236
Wright, Katharine, 237, 306
Wu, Nancy N. H., 151
Yalow, Roslyn S., 355
Young, Charlotte, 237

Opportunities for Women in Medicine, 26, 56, 82, 112, 150, 192, 234, 266, 303, 352, 411, 462
—associate in pediatrics and internal medicine, 462
Opportunities for practices, 268
Residency and practices available, 353

These Were the First
Allen, Daisy Emery, 33
Baker, Charlotte Johnson, 237
Bakwin, Ruth, 62
Baltrusaitis, Johanna Thomas Zelwis, 152
Bass, Elizabeth, 268
Biting-Kennedy, Miriam, 459
Bocchi, Dorothea, 459
Broomall, Anna E., 33
Brown, Edith Petrie, 89
Brown, Madelaine Ray, 459
Caldwell, Delia, 62
Chute, Pearl Smith, 89
Cin, Regina Dal, 89
Cleaves, Margaret Abigail, 306
Coffee, Margaret, 152
Daily, Ray, 62
Dale, Mary Bryant, 62
Dodson, Caroline Matilda, 152
Eckert, Marian Campbell, 152
Epler, Blanche, 62
Gauger, Adeline B., 111
Goodman, Pearl, 33
Hall, Lucy M., 237
Hammond, Loretta, 237
Havard, Katherine, 62
Heim-Vögtlin, Marie, 152
Hill, Lucy Scott, 268
Holland, Margaret Ellen, 268
Hopper, Marjorie Ross, 33
Johnston, Mary Elizabeth, 152
Klein, Nettie, 62
Kress, Lauretta, 194
Lindsay, Jessie McIntyre, 306
Lukens, Anna, 353
McCann, Edith, 194
McGraw, Harriet G., 89
Magill, Mary J., 89
Moore, Phoebe Jean, 62
Nasbaumer, Pauline S., 306
Neff, Mary Mawson, 459
Nelson, Lillian Heath, 111
Panayotatou, Anna, 194
Pearce, Louise, 33
Potts, Ann Longshore, 353
Preis, Clothilde Jacquet, 62
Ralli, Elaine Pandia, 62
Reel, Ida Virginia, 353
Richardson, Mary McDaniel, 111
Roberts, Isabel, 412
Rupert, Mary Priestley Sheriff, 111
Sabine, Jane Downes Kelly, 111
Shaw, Anna Howard, 306
Sheetz, Bertha E. Sutton, 89
Sheppard, Alice, 62
Sheriff, Hilda, 194
Spears, Mary McIndoe, 89
Stannard, Amy N., 62
Stone, Ellen Appleton, 89
Temple, Ruth, 89
Theodosia, 412
Townsend, Esther Maude, 237
Tracy, Mary, 152
Wallace, Helen M., 268
Warwick, Margaret, 62
Watson, Sophia Eliza, 89
West, Emma Jane, 306
Wilkite, Mary, 353
Winslow, Caroline, 412
Wright, Hannah Amelia, 412
Young, Florence (Sister M. Benedict), 412
Zoeller-McNamara, 412

World Health Organization
—*on* accidents in the home, 20
Fellowship awards continue to rise, 183
Food and health, 141, 409
—*on* malaria eradication, 20
Medicated salt for malaria, 183
—*on* mental health service in Jordan, 53
Protection against poliomyelitis, 300
Trachoma, 141
—*on* treatment of mentally ill and feeble minded, 105
U. S. government contributes one and a half million dollars for malaria eradication, 183
—*on* vaccine for rabies, 77
—on WHO program and budget for 1958, 105

PRESIDENT'S MESSAGE

Mermod, 21, 54, 107, 143, 184
Kahler, 185, 213, 263, 302, 348, 410, 442

REPORTS

AMWA Annual meeting 1957

BRANCH REPORTS
One (Kittredge), 318
Two (McGrew), 318
Three (Hiller), 319
Four (Kidd), 319
Five (Brodie), 319
Eleven (Englander and Schneider), 320
Twelve (Stanton), 320
Thirteen (Siems), 320
Fourteen (Tenbrinck), 320
Fifteen (Owen), 320
Eighteen (Walsh), 321
Twenty (Frazer), 321
Twenty-three (Dale), 321
Twenty-five (Reidy), 321
Twenty-six (Drips), 321
Twenty-nine (Fox), 322
Thirty (Ahlem), 322
Thirty-five (Mejia), 322
Thirty-eight (Haire), 322
Thirty-nine (Kleinert), 322
Forty-two (Jensen), 323
Forty-three (Henry), 323
Forty-six (Anderson), 323
Forty-seven (Doster), 324

FINANCIAL REPORTS
Finance committee (Le Marquis), 313
1956 audit, 313
Treasurer, 312

NEW BUSINESS
Courtesy resolutions, 325
Resolutions presented by reference committee A (Renshaw), 324

REPORT OF DIRECTOR OF JUNIOR MEMBERSHIP
(Marting), 315

REPORT OF OFFICERS
Assistant treasurer (Frazer), 311
Corresponding secretary (Arthur), 311
Executive secretary (Majally), 310
First vice-president (Brown), 310
President-elect (Kahler), 309
Recording secretary (Wineberg), 311
Second vice-president and chairman of organization and membership (Jones), 311

REPORT OF PRESIDENT
(Mermod), 308

REPORTS OF REGIONAL DIRECTORS
New England (Ryder), 313
North Atlantic (Morani), 313
Northwest (Grieve), 314
Southwest (Konttas), 314
Southwest Central (McNeely), 314

REPORTS OF STANDING COMMITTEES
American women's hospitals (Lovejoy), 311
Elections (Vaschak), 312
History of medicine (Kleinert), 315
International (Reid), 315
Report of the corresponding secretary to the MWIA (Morani), 312
Legislative (Speer), 316
Library (Menendian), 316
Medical education (Veach), 316
Nominating (Marting), 312
Opportunities (Parsons), 317
Publications (Waugh), 317
Publicity and public relations (Tyler), 317
Woman's Medical College of Pennsylvania (Macfarlane), 318

REPORTS OF STATE DIRECTORS
Illinois (Menendian), 314
Indiana (Frankowski), 314
Ohio (Grad and Nitchalls), 314
Oregon (van der Vlugt), 315

AMWA Midyear Board Meeting 1956

BRANCH DELEGATE REPORTS
One (Pincock), 117
Two (Stenhouse), 117
Eleven (Schneider), 117
Fourteen (Nemir), 117
Fifteen (Brown), 117
Sixteen (Helz), 117
Eighteen (Vuornos), 118
Nineteen (Noble), 118
Twenty (Platz), 118
Twenty-five (di Silvestro), 118
Thirty-six (Wineberg), 118
Thirty-nine (Shannon), 118

NEW BUSINESS
Approval of 1957-1958 standing committee chairmen, 121
Courtesy resolutions, 122
MWIA, 120
Opinion poll, 122
Program theme 1957-1958, 121
Resolutions referred by reference committee A, 121
Revised budget for 1957, 120
Trans-American world tours, 120

REPORTS OF OFFICERS
Executive secretary (Majally), 116
President (Mermod), 116
Recording secretary (Wineberg), 116
Treasurer (Fischer), 117

REPORTS OF REGIONAL DIRECTORS
Northwest Central, 117

REPORTS OF STANDING COMMITTEES
Finance (Wright), 118
History of Medicine (Kleinert), 119
International (Reid), 119
Library (Menendian), 119
Medical education (Veach), 119
Medical service—American women's hospitals (Lovejoy), 119
Publications (Waugh), 119
Scholarships (Taylor), 120
Woman's Medical College (Macfarlane), 120

International Night
Burgenstock Assembly (Wright), 360
Canadian Federation (Wolf), 358
Elizabeth Blackwell award (by Reid to Lovejoy), 362

—From Committees

AMERICAN WOMEN'S HOSPITALS
Hungarian women doctors aided (Lovejoy), 55
International hospitality, 194

INTERNATIONAL
From day to day with the United Nations (Reid), 149
International tour 1957: African safari enroute to the World Medical Assembly (Reid), 88
MWIA 1958 international tour (Reid), 357, 460
MWIA official emblem, 306
Midyear meeting tour around the Caribbean (Reid), 301, 348

LIBRARY
Open letter to women in medicine (Menendian), 24

AUTHORS

Abbate, Grace, 391
Ackerknecht, Erwin H., 65*
Ackerman, Lauren V., 197*
Adriani, John, 197*
Aggeler, Paul M., 280, 417
Ahlem, Judith, 322
Aitken, Janet K., 107
Albano, Flora, 326†
Aldrich, C. Knight, 156*
Alejandrino, Lourdes L., 186
Allen, Arthur C., 197*
Anderson, Camilla M., 323
Arthur, Frances H., 311
Ash, J. E., 197*
Atless, H. B., 238*
Baborka, Clifford J., 36*
Bacon, Harry E., 198*
Bailen-Rose, Frances, 272†
Bardley, James, III, 93*
Bash, Myron, 154†
Bates, Marston, 91*
Becker, Sylvia, 332
von Behring, Hilke, 75
Beizer, Lawrence H., 65†
Belknap, Ivan, 272*
Bell, Ann, 416*
Benedek, Tibor, 125*
Bennett, Ruth Blount, 86
Betterman, Otto L., 153*
Bevelander, Gerrit, 198*
Black, B. Marden, 94*
Bland, John H., 240*
Blank, Harvey, 35*
Bogatko, Frances L. H., 92,† 155,† 240
Bolten, Karl A., 464*
Bond, Lucille M., 126†
Booth, Stella, 64†
Bott, Phyllis A., 124†
Boyce, Frederick F., 63*
Boyd, William, 126*
Braatøy, Trygve, 155*
Brockway, Alvia, 94*
Brodie, Jessie Laird, 319
Brodkin, Eva T., 349
Bromberg, Walter, 34*
Brown, Edith Petrie, 117, 310
Brownsberger, Claire N., 42
Bruger, Maurice, 92*
Bullock, Weldon K., 415*
Buxton, St. J. D., 92,* 156*
Cameron, Margaret P., 124*
Campbell, Meredith, 64*
Carlson, Warner W., 35*
Cecil, Russell L., 93*
Chandler, Asa C., 63*
Clarke, B. G., 155*
Clarke, Miriam F., 125†
Cohen, Bernard M., 94*
Cohn, Helen E., 239†
Collins, Carter C., 284
Colowick, Sidney P., 125*
Cooper, Maurice Z., 94†
Copple, Peggy, 25
Corwin, V. M., 335
Cozen, Lewis, 94*
Cross, James H., 198*
Crossen, Robert James, 198*
Cushman, Beulah, 326*
Dale, Mary B., 321
Dalldorf, Gilbert, 36*
Dameshek, William, 65*
Danowski, T. S., 36*
Darrow, Ruth Renter, 241
Davidoff, Leo M., 94*
Davne, Albert, 415†
Deld, Mahlon H., 124*
Del Guercio, Louis R. M., 155*
Denton, Patricia R., 377
Deutschberger, Otto, 126*
Diggs, L. W., 416*
Dobbs, Edward C., 326*
Doster, Mildred, 324
Dreyer, N. B., 154†
Drips, Della G., 321
Dubos, Rene J., 154*
Dunner, Ada, 171
Echlin, Francis Asbury, 155*
Edward, Mary Lee, 30
Edwards, Margaret Hay, 35,† 36,† 272†
Elkington, J. Russell, 36*
Elliott, K. A. C., 123*
Engelhart, Ferdinand K., 123,† 153†
Englender, Gail, 320
English, Dorothy A., 296
English, Harrison F., 123,† 155†
Epstein, Martin, 63†
Eve, Ivor S., 199
Fahimi, Miriam, 78
Farris, Edmond J., 416*
Feiring, Emmanuel H., 94*
Ferguson, L. Kraeer, 126*
Ferreira, F. S. da Cruz, 205
Ferrer-Franco, Isabel, 17
Feuer, Lewis Samuel, 65*
Finkler, Rita S., 338
Fischer, Elizabeth R., 117
Fox, Vernelle, 322
Francis, Thomas, Jr., 415*
Frankenthal, Kate, 36*
Frankowski, Clementine, 259, 314
Frazer, Mary Margaret, 311, 321
Frederick, Portia M., 196*
Friess, Constance, 391
Frumin, Abraham, 34†
Furman, Bess, 443
Garcia-Ruiz, F., 155†
Gardner, Mabel E., 22
Gecht, Adele, 430
Gefter, William I., 64,† 90†
Geib, M. Eugenia, 13, 93†
Geiss, Mollie E., 34,† 197†
Gilman, Alfred, 126*
Givner, Isadore, 92*
Goodman, Louis S., 126*
Gotaas, Harold B., 156*
Grace, Helen K., 464†
Grad, Marjorie A., 315
Greisheimer, Esther M., 8, 37, 90*
Grieve, M. Irene, 314
Grumme, Marguerite, 93*
Gutman, Edith, 124†
Guttmacher, Alan F., 156*
Guyton, Arthur C., 197*
Hahn, Paul F., 154*
Haire, Sybil D., 322
Hallock, Grace T., 156*
Harrison, R. G., 123*
Harvey, A. McGehee, 93*
Haskell, Helen S., 93†
Hauck, Lydia B., 349
Haycock, Christine E., 437
Haymaker, Webb, 272*
Hazlet, John W., 415*
Hellman, Louis M., 239*
Helz, Mary K., 117
Henry, Mary Mitchell, 323
Hess, George A., 66,† 197,† 326†
Heisen, Aaron, J., 63†
Hill, Bradford, 66*
Hiller, Grace, 319
Hingson, Robert A., 239*
Hoag, M. Silvija, 280, 417
Hoerr, Normand L., 197*
Holley, Howard L., 35,* 64*
Hoskins, Margaret M., 198*
Huerper, W. C., 196*
Hussar, Allen E., 64*
Inhelder, Bärbel, 222*
Ing., Milivoj Petrik, 156*
Isaacs, Bertha L., 255
Jablon, Seymour, 94*
Jensen, Francine, 323
Jolly, Hugh, 35*
Jones, Gertrude Flint, 311
Jones, Tony Everett, 94*
Kahler, Elizabeth S., 185, 225, 231, 263, 302, 309, 348, 391, 410, 442
Kahn, Robert L., 125*
Kaplan, Nathan O., 125*
Karsner, Howard T., 34*
Kazainis, L. E., 198†
Keefer, Chester S., 63*
Kelly, Thomas, 238†
Kidd, Ruth, 319
King, Lois I., 272†
Kirber, Maria W., 154,† 415†
Kittredge, Elizabeth, 318
Kleegman, Sophia J., 391
Klein, Henry J., 66†
Kleiner, Charlotte A., 356
Kleinert, Margaret Noyes, 118, 315, 322
Kligman, Albert M., 239*
Kline, Nathan S., 123*
Knight, Robert A., 153*
Knopf, A. M., 416†
Konttas, Pearl V., 314
Krapf, E. E., 212
Kritchevsky, David, 423
Kuhn, Beatrice H., 73
Kushner, Daniel S., 63*
Kushner, Joseph H., 291
Kyhos, Emma Dowling, 335

*Author or editor of book.
†Book reviewer.

Lamb, Richard R., 197†
Lathrop, John Howland, 391
Laughlin, Henry P., 155*
Leard, Samuel E., 63*
Le Marquis, Antoinette, 313
Lemkau, Paul V., 64*
Liebman, Samuel, 415*
Lindemann, Lillian C., 379, 414
Lloyd, Samuel J., 126†
Loeb, Robert F., 93*
Long, Esmond R., 94*
Lord, Jere, 64†
Lorentz, E. Barbara, 342
Lovejoy, Esther Pohl, 22, 55, 119, 195, 311
Loveless, Mary Hewitt, 383
Lowrie, Robert J., 153*
Lucia, Salvatore P., 35*
Lyght, Charles E., 156*
McCall, Milton L., 464*
McCue, Carolyn Moore, 363
McGrath, N. E., 126†
McGrew, Elizabeth A., 318
McLaughlin, Blaine E., 34†
McNeely, Anita J., 314
Macfarlane, Catherine, 120, 318
Mahn H., Erna, 99
Maier, Herbert C., 416*
Majally, Lillian T., 32, 116, 144, 310
Major, Ralph H., 124*
Malan, R. M., 45
Martin, Ethel Austin, 125*
Martin, Gustav J., 90*
Marting, Esther C., 312, 315
Mayer, Edgar, 416*
Meaker, Samuel R., 93*
Mejia, Carmen, 322
Menendian, Rose V., 22, 24, 119, 314, 316
Meng, Heinrich, 171
Mermod, Camille, 21, 54, 107, 116, 143, 184, 308, 327
Merrill, John P., 123*
Meschan, Isadore, 272*
Messinezy, D. A., 216
Millar, Elaine C. P., 124,* 240*
Miller, Ruth E., 66†
Modell, Walter, 66*
Monroe, Robert T., 157
Montagu, Ashley, 35,† 36,† 65,† 91,† 153,† 326†
Montague, Joseph F., 154*
Moore, John Royal, 153†
Morani, Alma Dea, 1, 91,† 312, 313
Mulholland, Stanford W., 64†
Murray, Frank H., 198†
Murto, Robert, 326†
Myers, Gordon B., 272*
Neave, Helen J., 239†
Nemir, Rosa Lee, 117, 391
Newton, Niles, 66*
Nitchalls, Jeanne E., 315
Noble, Nelle, 118
Obayashi, Yoji, 94*
Obermeyer, Maximilian E., 65*
Oesterling, M. Jane, 91†
Ohara, Kazue, 175
O'Neill, Desmond, 34†
Opler, Marvin K., 153*
Oppenheim, Elliot, 123*
Ortmayer, Marie, 95
Osol, Arthur, 197*
Oughterson, Ashley W., 238*
Owen, Virginia, 320
Paclisanu, George, 416†
Page, Irvine H., 124*
de Palma, Anthony F., 94*
Pampana, E. J., 94*
Parkhurst, Helen, 391
Parmenter, Hazelene S., 90†
Parsons, Eloise, 317
Parsons, Langdon, 157
Pemberton, John DeJ., 94*
Peritz, Edith M., 126†
Phillips, M. Alice, 136
Piel, Carolyn F., 273
Pierce, Mila, 247
Pillsbury, Donald M., 239*
Pincock, Carolyn, 117
Platt, Lois I., 224
Platz, Carol, 118
Pool, John L., 416†
Pope, Doris S., 91†
Popper, Hans, 63*
Quastel, J. H., 124*
Rake, Geoffrey, 35*
Rathmell, Thomas K., 63,† 238†
Ratner, Hilda, 272†
Recio, Porfirio Mayo, 198*
Reed, Shelton C., 36†
Reid, Ada Chree, 88, 119, 124,† 149, 316, 357, 362, 460
Reid, Roger D., 66*
Reidy, Elsie T., 321
Renning, Elise, 198†
Renshaw, Josephine, 324
Reynolds, Orr E., 66*
Richards, Victor, 240*
Riese, Hertha, 369
Rigor, Eustacia, 247
Robinson, Douglas H., 34,† 65,† 125†
Ropes, Marian W., 157
Ross, Stuart, T., 198*
Rothmund, Hildegard, 92†
Russell, P. F., 94*
Ruys, A. Charlotte, 360
Ryder, Claire F., 157, 313
Sadove, Max S., 198*
Sanford, Heyworth N., 254
Sawitz, William G., 416*
Schneider, Margaret, 117, 320
Selvini, Mara Palazzoli, 60
Sevag, M. G., 66*
Shannon, Mary C., 118
Sharp, George S., 415*
Shaw, Edward B., 434
Shelly, Walter B., 239*
Sherman, Robert S., Jr., 291
Sherwin, Ruth W., 240†
Shindel, Dorothy L., 90†
Shmigelsky, Irene, 241, 271
Shostac, Frances, 93†
Shousha, Aly Tewfik, 209
Siems, Margaret, 320
di Silvestro, Helen, 118
Siris, Evelyn, 291
Smadel, Joseph E., 415*
Smith, Elizabeth C., 13
Smith, Joseph T., 154†
Smith, Percy L., 238†
Sobel, Gertrude, 67
Soffer, Louis I., 326*
Speed, J. S., 153*
Speer, Alma Jane, 316
Speert, Harold, 156*
Splendido, Joseph, 35,† 36,† 123†
Stanton, Juliet, 320
Stefanini, Mario, 65*
Stenhouse, Evangeline E., 117
Stevenson, George S., 156*
Stillwell, E. Frances, 124,† 198†
Stimson, Barbara Bartlett, 154*
Stout, Arthur Purdy, 197*
Strachan, Clarice B., 91*
Sturm, Dorothy, 416*
Sutton, Richard L., Jr., 239*
Tanner, J. M., 65,* 222*
Tauber, Robert, 92*
Taylor, Ann Gray, 66,† 120
Tenbrinck, Margaret Schaffner, 195,† 220,† 320
Texter, E. Clinton, Jr., 36*
Thelander, H. E., 294, 307
Thomas, Carmen C., 35,† 64,† 239†
Thompson, George N., 238*
Tocantins, Leandro M., 34*
Trommer, Philip R., 125†
Twist, John Russell, 123*
Tyler, Mary W., 317
Tyndall, Marian, 415
Vanamee, Parker, 240*
Van Loon, Emily Lois, 51
Vaschak, Mathilda R., 10, 312
Veach, Elizabeth, 119, 317
van der Vlugt, Martha R., 315
Vreeland, Robert W., 284
de Vries, Pieter, 284
Vuornos, Elisabeth, 118
Waelsch, Heinrich, 91*
Wagner, Robert P., 91*
Wallerstein, Ralph O., 280, 417
Walsh, Anna P., 321
Wangensteen, Owen H., 156*
Warren, Shields, 238*
Waugh, Elizabeth S., 80, 81, 119, 317
Weeks, E. B., 202
Weil, Paul G., 65*
Weinhouse, Sidney, 125,† 464†
Weinstein, Edwin A., 125*
Wheatley, George M., 156*
White, Paul Dudley, 127
White, Priscilla, 157
Wiedman, Mary P., 197†
Wilder, Joseph R., 91*
Wilder, Lucy, 156*
Willard, John H., 63†
Williams, Gordan F., 273
Williams, Roger J., 464*
Willis, Rupert A., 197*
Willis, Theodore A., 153*
Wilson, Charles O., 94*
Wineberg, Anah C., 118, 311
Wittner, Asta J., 92,† 416†
Wolf, Ruth, 358
Wolstenholme, G. E. W., 124,* 240*
Worcester, Blandina, 391
Wright, Katharine, 118, 360
Yalow, Rosalyn S., 154†

she needs support, too...

during pregnancy and throughout lactation

NATABEC® KAPSEALS®

vitamin-mineral combination

She balances her nutritional needs by adding to her diet NATABEC Kapseals prescribed by her physician. As a dietary supplement, NATABEC provides vitamins and minerals for nutritional support, helping to promote better present and future health for the mother and her child.

each NATABEC Kapseal contains:

Calcium carbonate	600 mg.
Ferrous sulfate	150 mg.
Vitamin D	400 units
Vitamin B_1 (thiamine) mononitrate	3 mg.
Vitamin B_2 (riboflavin)	2 mg.
Vitamin B_{12} (crystalline)	2 mcg.
Folic acid	1 mg.
Synkamin® (vitamin K) (as the hydrochloride)	0.5 mg.
Rutin	10 mg.
Nicotinamide (niacinamide)	10 mg.
Vitamin B_6 (pyridoxine hydrochloride)	3 mg.
Vitamin C (ascorbic acid)	50 mg.
Vitamin A	4,000 units
Intrinsic factor concentrate	5 mg.

Dosage

As a dietary supplement during pregnancy and throughout lactation, one or more Kapseals daily. Available in bottles of 100 and 1,000.

PARKE, DAVIS & COMPANY
DETROIT 32, MICHIGAN

0615

PHARMACEUTICAL ADVERTISING AND PROMOTIONAL LITERATURE

Residents and interns at times receive letters, brochures, circulars, and other literature from various components of the pharmaceutical industry. As the resident establishes himself in practice, the quantity of such mail will increase substantially. And, although the intent and value of this plethora of literature is frequently questioned by doctors, a number of physicians who have devoted considerable thought and study to the subject of medical advertising are convinced that the literature made available to physicians by the pharmaceutical industry represents one of the major factors in the postgraduate education of the American physician.

"If this is the case," one may ask, "how well is the job being done? How thorough is this 'education by literature'?" Perhaps most significant to the answer is the fact that pharmaceutical product information is based primarily on the pharmacological, toxicological, and clinical acumen of our scientists and technicians. We can presume, therefore, that the information stems from reliable source material.

When an occasion arises which leads us to question the information presented, it is usually because one of our community of physicians has been overenthusiastic, uncritical, or has misinterpreted his results. Certainly in these instances we cannot hold the pharmaceutical industry wholly responsible.

The pharmaceutical companies do have an obligation to check the statistical accuracy of clinical studies under their direct sponsorship, and, further, to select the physician-director of such studies from the ranks of investigators whose integrity is unquestioned.

But the industry does not sit in judgment on members of our profession. In the last analysis it is through the exercise of each physician's own critical faculties that all medical literature must be evaluated. As physicians, we are the final judges of the competency of our colleagues.

The pace of pharmaceutical research has increased at an amazing rate over the past decade. And despite the many criticisms leveled at pharmaceutical literature, physicians have come to depend to an increasing degree on pharmaceutical advertising and promotion for capsule information concerning new products.

In this, medical journal advertising plays an important role. Most medical journals could not exist, except at very considerable increases in their cost to the physician, without the support of advertising created and paid for by the pharmaceutical industry. (Obviously, this support of journals would not exist to any important extent if the pharmaceutical companies weren't convinced of the fact that physicians read advertising material published in medical journals.) And the main reason the physician devotes the time to digest information presented in the advertising is so that he can keep up-to-date on the latest developments in pharmaceutical products, quickly orient himself on indications for the use of new and old products, and read in abstract much of what is in the form of promotional mail.—*Perrin H. Long.* (Reprinted from *Resident Physician*, December, 1956.)

SUPERIOR TOLERANCE

"Of the 75 patients receiving iron [MOL-IRON] therapy, [only] one was forced to stop treatment . . ."

(Am. J. Obst. & Gynec. 62:947, Nov. 1951.)

OUTSTANDING EFFECTIVENESS

"We have never had other iron salts so efficacious . . ."

(Am. J. Obst. & Gynec. 57:541, Mar. 1949.)

RAPID RESPONSE

". . . produced a substantially more rapid therapeutic response than ferrous sulfate . . ."

(Bull. Margaret Hague Mat. Hosp. 1:68, Sept. 1948.)

these are the hallmarks of

MOL-IRON®
(Molybdenized Ferrous Sulfate)

and it costs no more than ordinary iron preparations

Each tablet or teaspoonful of liquid contains ferrous sulfate 195 mg. (3 gr.) and molybdenum oxide 3 mg., as special coprecipitated complex.

Tablets: bottles of 100

Liquid: bottles of 12 fl. oz.

The outstanding therapeutic advantages of Mol-Iron have been established by more published clinical reports[1-14] during the past ten years, than are available for any other iron preparation.

Complete bibliography available on request.

to fit different
prenatal requirements

2 MOL-IRON®

(MOLYBDENIZED FERROUS SULFATE)

preparations

For comprehensive nutritional support

GESTATABS® The only OB-Supplement with Mol-Iron

Tablets: bottles of 60

"Just 2 for 2". . . 2 tablets a day give comprehensive mineral-vitamin support (including phosphorus-free calcium and vitamin K) required by both mother and child.

OR

When iron is the dominant need

MOL-IRON WITH CALCIUM AND VITAMIN D

Tablets: bottles of 100

Each tablet equals one MOL-IRON tablet plus 250 mg. of phosphorus-free calcium and 200 U.S.P. Units of vitamin D.

Dosage: 2 tablets t.i.d.

For best results—choose the right iron

White's

White Laboratories, Inc., Kenilworth, New Jersey

"Meal-wise, the Doc's probably right . . .

"But, man, I'm too **nervous** to eat! Like tonight. Big jingle session with The Client. Andy's Atomic Egg Beaters. **Yes, Andy. No, Andy. Oh, your wife writes jingles too, Andy? Oh, ha, ha, those are a SCREAM, Andy! Let's just tear ours up, Andy! Eat**, man? Never heard of the word . . ."

When you finally bring him around, remember that what he'll probably need first . . . and **most** . . . is the essential B-complex. And that's a good time for

a good B-complex . . .

sur-Bex® with C

(Abbott's B-Complex Tablets with C)

Just one Sur-Bex tablet a day supplies:

Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	1 mg.
Vitamin B_{12}	2 mcg.
Calcium Pantothenate	10 mg.
Ascorbic Acid	150 mg.
Desiccated Liver, N.F.	300 mg.
Brewer's Yeast, Dried	150 mg.

As a dietary supplement: 1 or 2 tablets daily
In convalescence: 2 or more tablets daily

Abbott

EDITORIAL FORECAST

January 1958

Nellie N. Barsness, M.D., is the Guest Editor for the special Branch Twenty-Six, Minnesota, issue of the JOURNAL, which will include historical information about medical women in Minnesota as well as scientific articles.

"Cerebrovascular Accidents," by Marguerite Schwyzer, M.D.

"Trichomonas Vaginitis: A New Perspective," by Jane E. Hodgson, M.D.

"Therapeutic Value of a Psychiatric Consultation," by Mary E. Giffin, M.D.

"Career Highlights of Women Physicians in Pioneer Minnesota" and a history of Branch Twenty-Six are reviewed by Dr. Barsness.

"First Medical Women in Minnesota," by Annah Hurd, M.D.

"Fatigue—Woman's Greatest Enemy," by Anna Marion Hilliard, M.D., the address presented at the Midyear Meeting on November 17, is also included in this issue.

AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

APPLICATION FOR MEMBERSHIP

Name ..... Date .....
(Please print as it should appear in the Directory.)
Address (Present) .....
Address (Permanent) .....
(Please check address to which JOURNAL and AMWA correspondence are to be mailed.)
Medical School .....Year of Graduation .....
Licensed in County .....State .....
Specialty .....Certification by American Board of.....Year.....
Date and Place of Birth .....
Medical Society Affiliations .....
.....
.....
Hospital and Faculty Appointments .....
.....
Public Health, Government, or Industrial Appointments .....
.....
.....

Check membership desired:

☐ Life-Dues $200 (May be paid in two installments in two consecutive years).
☐ Active-Dues $10 per annum. (Branch dues not included in Active membership dues and are payable to Branch treasurer.)
☐ Associate-No dues. ☐ Junior-No dues.

LIBRARY FUND COMMITTEE CHAIRMEN

Branch One, Washington, D.C., A. Genevieve McEldowney, M.D., St. Elizabeth's Hospital.

Branch Ten, Wisconsin, Elizabeth Comstock, M.D., Arcadia.

Branch Thirteen, San Diego, Calif., Viola Erlanger, M.D., 336 Kalmia.

Branch Fourteen, New York, Anna K. Daniels, M.D., 270 West End Ave., New York 23.

Branch Nineteen, Iowa, Jean Jongewaard, M.D., 201 Lincoln Way, Jefferson.

Branch Twenty, (Blackwell) Detroit, Mich., Grace Perdue, M.D., 763 Fisher Bldg.

Branch Twenty-Three, Los Angeles, Calif., Phyllis Moeller, M.D., 3235 Palmer Drive.

Branch Twenty-Five, Philadelphia, Pa., Frieda Baumann, M.D., Woman's Medical College, Henry Ave. and Abbottsford Road.

Branch, Twenty-Six, Minnesota, Nellie W. Barsness, M.D., 540 Lowry Medical Arts Bldg., St. Paul.

Branch Twenty-Nine, Atlanta, Ga., Betty Ann Brooks, M.D., 603 Church St., Decatur.

Branch Thirty-Two, Western North Carolina, Mary Frances Shuford, M.D., Legal Bldg., Asheville.

Branch Thirty-Eight, Long Beach, Calif., Sybil Haire, M.D., 5221 Arbor Rd.

Branch Thirty-Nine, Boston, Mass., Ann Wight, M.D., Massachusetts General Hospital.

CONSTITUTION OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

Article III, Section 1a. **Active Members** "shall be members of a Branch, if any local Branch exists; if not, they may be members-at-large."

Article III. Section 6. **Associate Members** "shall be: (1) medical women in the first year of practice; (2) women interns, residents-in-training, and fellows. Associate members shall not pay dues and shall have all privileges of membership, except voting, holding office, and membership in the Medical Women's International Association."

Article III. Section 7. **Junior Members** "shall be members of Junior Branches in the four undergraduate years of medical school."

All members receive the official publication, the JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION. Life and Active members receive membership in the Medical Women's International Association.

Signature.....

Endorsers are required only if applicant is NOT a member of a State or County medical society. Endorsers must be members of American Medical Women's Association

Endorser: 1. ..... Address.....

2. ..... Address.....

Checks payable to the American Medical Women's Association, Inc. must accompany application. Mail to Treasurer, A.M.W.A., 1790 Broadway, Room 315, New York 19, N.Y., or to the Branch Treasurer.

INDEX TO ADVERTISERS

Abbott Laboratories .....(24-25), 34
Bristol-Myers Company 17
Ciba 1
Coca-Cola 15
Geigy Pharmaceuticals 27
Hoffmann-La Roche Inc. .....(16-17), 29
Johnson & Johnson 7
Lederle Laboratories 11, 22-23
Eli Lilly & Company 30
Mead Johnson .....Back Cover, 2, 8
Merck Sharp & Dohme ..Inside Back Cover, 4
Parke, Davis & Company 19, 31
Riker Laboratories .....Inside Front Cover
J. B. Roerig & Company 38
Schering Corporation 5
G. D. Searle & Company 18, 21
Wallace Laboratories .....(8-9)
White Laboratories, Inc. 32-33
Wyeth Laboratories 13

INDEX TO PRODUCTS ADVERTISED

ANOREXIGENIC AGENTS
Altepose *(Merck Sharp & Dohme)* Inside Back Cover
Preludin *(Geigy)* 27

ANTACIDS
Trisogel *(Lilly)* 30

ANTACID LAXATIVES
Sal Hepatica *(Bristol-Myers)* 17

ANTIBIOTICS
Achromycin *(Lederle)* 22-23
Meti-Derm Ointment with Neomycin *(Schering)* 5

ANTIEMETICS
Bonadoxin *(Roerig)* 38
Dramamine *(Searle)* 18

BABY PRODUCTS
Baby Lotion *(Johnson & Johnson)*. 7
S-M-A- Instant Powder *(Wyeth)* 13

CHILDREN'S VITAMINS
Deca-Mulcin *(Mead Johnson)* 8
Deca-Vi-Caps *(Mead Johnson)* 8
Deca-Vi-Sol *(Mead Johnson)* 8

DERMAL DRYING AGENTS
Selsun *(Abbott)* .....(24-25)

DIETARY SUPPLEMENTS
Redisol *(Merck Sharp & Dohme)* 4
Sur-Bex with C *(Abbott)* 34

–PRENATAL
Filibon *(Lederle)* 11
Gestatabs *(White)* 32-33
Mol-Iron with Calcium and Vitamin D *(White)* 32-33
Natabec Kapseals *(Parke, Davis)* 31
Natalins-PF *(Mead Johnson)* 2
Storcavite *(Roerig)* 38

HEMATINICS
Iberol *(Abbott)* .....(24-25)
Mol-Iron *(White)* 32-33

HORMONES
Milprem *(Wallace)* (8-9)
Norlutin *(Parke, Davis)* 19

NEBULIZERS
Medihaler-Epi and Iso *(Riker)* Inside Front Cover

OBSTETRIC ANESTHESIA
Nupercaine *(Ciba)* 1

SADDLE BLOCK ANESTHESIA
Nupercaine *(Ciba)* 1

SEDATIVES
Noludar *(Roche)* 29

SOFT DRINKS
Coca-Cola *(Coca-Cola)* 15

STOOL SOFTENERS
Colace *(Mead Johnson)* .....Back Cover
Peri-Colace *(Mead Johnson)* ..Back Cover

SULFONAMIDES
Lipo Gantrisin *(Roche)* .....(16-17)
Meti-Derm Cream *(Schering)* 5

TRANQUILIZERS
Milprem *(Wallace)* .....(8-9)
Miltown *(Wallace)* .....(8-9)

VAGINAL THERAPEUTICS
Floraquin *(Searle)* 21

NEW CONTROLLED STUDY OF 1240 GRAVIDA CONFIRMS:

BONADOXIN® STOPS MORNING SICKNESS IN NEARLY 9 OUT OF 10

(86.9%)*

". . . *Bonadoxin is a great advance in the management of nausea and vomiting . . . .*"*

To put *your* blue-at-breakfast patients back in the pink, prescribe BONADOXIN (usually one tablet at bedtime).

Supplied: bottles of 25 and 100 tiny pink-and-blue tablets. Each tablet combines meclizine (25 mg.) and pyridoxine (50 mg.). *Contraindications:* none.

And if they need a nutritional buildup with freedom from leg cramps†—remember STORCAVITE®.

STORCAVITE® supplies 10 essential vitamins and 7 important minerals, including iron and phosphate-free calcium.

†due to calcium-phosphorus imbalance.

*Goldsmith, J. W.: Minn. Med. *40*:99 (Feb.) 1957.

Roerig Rx NEW YORK 17, NEW YORK

A little weight loss adds a lot to life

ALTEPOSE®

Hunger is a powerful distracting force, hard to ignore. When your fat patient's will power needs a prop, ALTEPOSE can help. The 'Propadrine' in ALTEPOSE curbs the appetite with less central nervous stimulation than amphetamine. Thyroid releases tissue-bound water, thus brings about encouraging weight loss early in the diet regimen. 'Delvinal' relieves tension and irritability.

MSD

MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

all ages benefit from the Colace Family

for the management of constipation

when bowel motility is adequate

Colace
dioctyl sodium sulfosuccinate, Mead Johnson

Capsules
Syrup
Liquid (drops)

softens stools without laxative action

when bowel motility is inadequate

Peri-Colace
peristaltic stimulant – stool softener, Mead Johnson

Capsules
Syrup

softens stools and stimulates peristalsis

MEAD JOHNSON
SYMBOL OF SERVICE IN MEDICINE

C0480